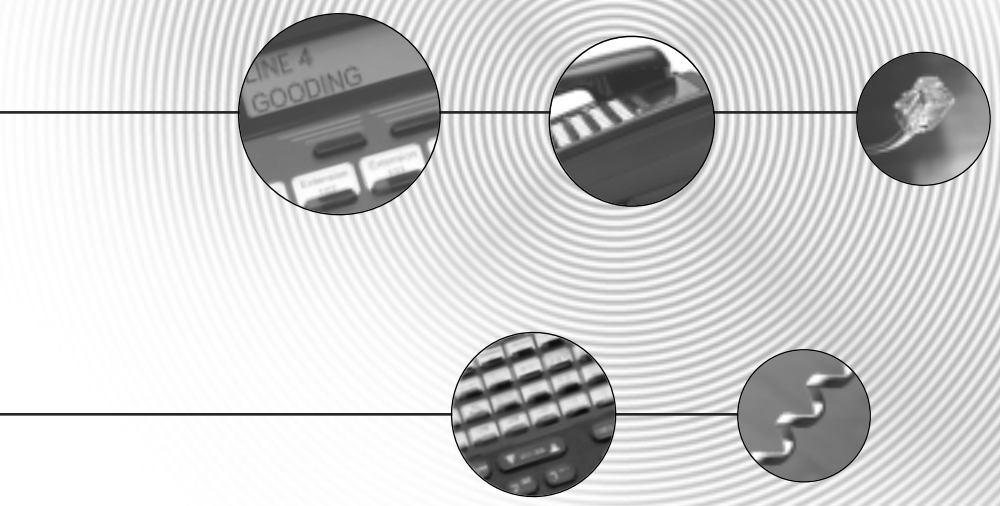
COMDIAL DX-80

DX-80™

Installation & Maintenance Manual



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1. Overview

The Comdial DX-80 is a fully digital hybrid key telephone system. The DX-80 utilizes “Loop Start” central office (Telephone Company) line interfaces and a mix of analog and digital extension ports to provide office communications and connectivity to the Public Switched Telephone Network. The DX-80 delivers a vast array of office productivity features and telephone use enhancing features including Caller Identification (required Telephone Company subscription) in the standard package. Unlike most systems that support Caller ID, the DX-80 supports Caller ID to DX-80 proprietary digital extensions and to third-party, Caller ID capable analog devices (cordless telephones, etc.)

Although most features are standard, the DX-80 provides for several optional features to further enhance office communications. Built-in voice processing integration packages are: Automated Attendant, Cost Effective Flash-Based Voice Mail/Auto Attendant and Cost Effective, fully-featured Hard Drive-based Voice Mail/Auto Attendant. The DX-80 platform allows the application of these voice processing platforms without loss of valuable system port resources.

The DX-80 is comprised of an application configured, expandable Key Service Unit (KSU) platform. There is one fully featured Digital Executive (display) Telephone that delivers access to all system functionality. The system architecture provides an expandable interface for digital port growth and analog port growth. The basic configuration supports both device types. (Analog ports might be used for plain old telephones, fax machines, modems, etc.) The DX-80 is designed to meet the telecommunications needs of small to medium business offices.

System Technology

The DX-80 incorporates state of the art digital technology for voice switching and call processing utilizing Pulse Code Modulation and Time Division Multiplexing (PCM/TDM). The DX-80 is a non-blocking switch, with no loss or degradation of voice signals. The system is stored-program control and utilizes a 16-bit, 20 MHz main microprocessor and peripheral devices (extensions and CO lines) processors in a distributed processing configuration. Memory consists of 640K bytes of ROM (Read Only memory) and 384K bytes of RAM (Random Access Memory) (RAM is lithium battery protected).

The DX-80 is factory equipped as follows:

KSU1 (PN 7201) with the following

- Eight (8) digital extension ports
- Four (4) analog device ports
- Four (4) CID ready CO Line ports
- Two music source inputs (can be assigned as desired to CO lines for hold music/messages
- One power failure port (CO Line 1)
- One control contact (LBC, Gate, External Page Control)
- One external paging equipment interface
- Two serial ports
- PC-DBA programming
- SMDR (Station Message Detailed Recording).

Optional Equipment

The optional equipment is listed below:

KSU2 (PN 7202) used to expand the system capacity beyond KSU1 limits. Includes eight (8) digital extension ports, four (4) CO line ports and one power failure port (CO line circuit 1).
DPM8 (PN 7220) (Digital Port Module - 8 circuit) (installs into KSU1 or KSU2)
APM4 (PN 7230) (Analog Port Module - 4 circuit) (installs into KSU1 or KSU2)
COM4 (PN 7210) (CO line Module - 4 circuit with one power failure port on first CO line circuit) (installs into KSU1 or KSU2)
MDM (PN 7249) (Modem Module) (for use with off-site programming) (installs into KSU1 only)

AAM (PN 7240) (Automated Attendant Module - 4 port, one menu for routing, 10 announcements for various caller greetings) (installs into KSU1 only)
FL-4 (PN 7241) (Flash-based, 4-port Voice Mail with Auto Attendant, 1.5 hours storage and 100 mailboxes)
FL3HR (PN 7241E) (Flash-based Voice Mail storage expansion module adds 3 hours storage to the FL-4)
PC-8 (PN 7243) (Hard Drive-based, 8-port Voice Mail with Auto Attendant, 130 hours storage and 100 mailboxes)

The maximum system configuration is 16 CO lines, 56 extensions (48 digital and 8 analog) and 8 voice processing channels.

Configuration

The Comdial DX-80^{TM} platform is comprised of one full-featured key telephone model and two modular KSUs (Key Service Unit). Several modules are available for enhanced system applications and configuration expandability.

KSU1 Components

- CPM (Central Processor Module) with:
  Two Serial Ports
  Two Music Ports
  One Control Contact (External Paging/LBC/Gate Control)
  One External Page Equipment Interface Connection
  Socket connectors for:
  ...KSU2(labeled "2nd Cabinet"), MDM, and VP modules (AAM, FL-4, and PC-8)
  The CPM is installed inside of KSU1 to the 408M ribbon cable J4 (also labeled "To CPM")

- Standard 408M (part of 7201) with:
  4 CO Line Ports
  1 Power Failure Transfer Port for the first CO line circuit
  8 Digital Ports
  Ribbon cable (J1, also labeled "COM4") for connection to the COM4 Module (PN 7210) in KSU1
  Ribbon cable sockets (J2 and J3, also labeled "To DPM8/APM4") for connection of DPM8 (PN 7220) or APM4 (PN 7230) modules.

- Standard APM4 (part of 7201) with:
  4 Analog Device Ports (installed on ribbon cable J5, also labeled "APM4")

KSU2 Components

- Standard 408E (part of 7202) with:
  4 CO Line Ports
  1 Power Failure Transfer Port for the first CO line circuit
  8 Digital Ports
  Ribbon cable (J1, also labeled "COM4") for connection to the COM4 Module (PN 7210)
  Ribbon cable sockets (J2 and J3, also labeled "To DPM8/APM4") for connection of DPM8 (PN 7220) or APM4 (PN 7230) modules.
  Shielded cable (J4) for connection to CPM socket JP2 (also labeled "2nd Cabinet") in KSU1

Voice Processing Modules

The DX-80 provides for several voice processing options. (Voice processors are commonly referred to as Voice Mail systems. However this term is too generic to accurately describe the options available and how they might be applied.) The optional Voice Processors that can be added to the DX-80 are fixed system resources that do not require peripheral device ports (analog or digital). This significant advantage means that the DX-80 VP options can be added to any DX-80 configuration without "port loss". (Most

communications products interface voice processors of some sort but suffer the ill effects of reducing the overall capacity of the system when the voice processor is connected.) Because the DX-80 doesn't use conventional peripheral ports to interface the VPs, we refer to the VP connectivity in terms of "channels."

AAM (Automated Attendant Module): The AAM provides four channels for automated attendant operation only. The AAM is then capable of handling four calls simultaneously. Callers answered by the AAM are greeted by one of four (4) greetings associated to the DX-80 mode of operation (Day / Evening / Alternate / Temporary). Various other announcements are also included for caller processing (see Automated Attendant in the Features section of this manual for more details).

FL-4 (Flash-based, four port VM with Automated Attendant): The FL-4 provides four channels for automated attendant and voice mail operation. The FL-4 is equipped to support up to 100 voice mailboxes and 1.5 hours of message storage (including the various greeting announcements).

FL3HR (Flash-based, three-hour message storage expansion): The FL3HR is added to the FL-4 above to increase the total message storage time from 1.5 hours to 4.5 hours.

PC-8 (PC-based, eight port VM with Automated Attendant): The PC-8 provides eight channels for automated attendant and voice mail operation. The PC-8 is equipped to support up to 100 voice mailboxes and 130 hours of message storage (including the various greeting announcements).

All of the above Voice Processors are connected to the DX-80 Central Processor Module (CPM) via specific interface socket(s). (See install details for the various devices, AAM included in this manual, FL-4 and PC-8 included with the unit.)

Configuration Table

Equipment Installed				CO Lines	Digital Ports	Analog Ports
	COM4	DPM8	APM4			
KSU1 (one APM4 included standard)				4	8	4
		1		4	16	4
		2		4	24	4
	1			8	8	4
	1	1		8	16	4
	1	2		8	24	4
	1	1	1	8	16	8
KSU2 adds to KSU1 configuration (KSU2 does not come with an APM4)				4	8	
		1		4	16	
		2		4	24	
	1			8	8	
	1	1		8	16	
	1	2		8	24	
	1	2	1	8	24	4
	1	1	2	8	16	8
Maximum configuration using 100% of digital port capacity				16	48	8
Maximum configuration using 100% of analog port capacity				16	32	16

Key Service Unit

The DX-80 Key Service Unit (KSU) is a modular flat-pack design. Two KSU's (KSU1 and KSU2) may be equipped to achieve the total system capacity of 16 CO lines, 56 Extensions (48 digital and 8 analog) and 8 Voice Processing Channels. KSU1 is factory equipped with one 408M, one APM4 and the CPM (Central Processor Module). KSU2 is factory equipped with one 408E. Each KSU is a self-contained cabinet with internal power supply. The power supply AC transformer can be hard-wire selected for either **117**vac or **230**vac operation. (It is shipped wired for 117vac operation.) The KSU is designed to be mounted on the wall and is shipped with a wall mounting template. The compact KSU weighs less than 20 pounds and is UL Listed.

Panels installed over various KSU openings may be removed or repositioned to accommodate exterior connection requirements. Three such panels are present. One may be removed to route a serial cable through the KSU outer housing for connection of ancillary SMDR equipment. Another may be removed to route a serial (NULL Modem) cable through the KSU outer housing for direct connection of a PC for on-site PC-DBA programming. One KSU opening panel may be removed or repositioned to accommodate cable entry requirements through the outer housing for connection of station/extension cables or to the MDF.

From the exterior, with covers in place, KSU1 and KSU2 look identical. However, KSU1 contains the Central Processor Module (CPM) (system call processing).

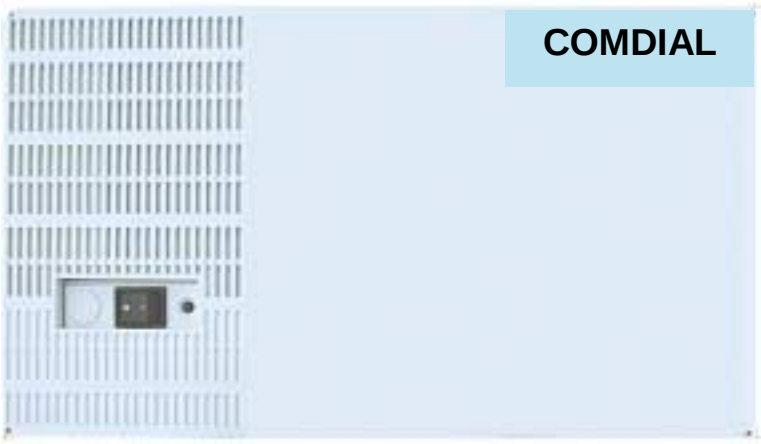


Figure 1: DX-80 Key Service Unit

Power Supply

The power supply circuitry of the DX-80 incorporates a linear design AC transformer with a choice of input voltage taps. The transformer primary windings are shipped wired for 117vac applications. A factory insulated tap wire may alternately be connected for 230vac applications. Since the power supply is linear in design the output voltage varies between 21.6vdc and 32vdc depending on load and stability of the input voltage. The output voltage is delivered to the 408M (in KSU1, 408E in KSU2) for voltage regulation. All system operation and logic voltages are produced at the 408M/E.

Two fuses are equipped on the power supply board, one for ac input over-voltage protection and one for DC output over-current protection. A main power switch is accessible when the KSU cover is in place. In the event battery backup operation is desired the KSU power cord can be connected to a external (ancillary) UPS (Un-interruptible Power Supply). It is the responsibility of the installer to match the battery requirements/UPS requirement to the specific needs of the equipment owner.

To determine the battery requirement needs and UPS requirement use the chart in Specifications (this section) to find the current draw and necessary Amp/Hour back up support that the battery/UPS is to supply.

CPM (Central Processor Module)

The CPM module is equipped standard in KSU1. This board contains all circuitry required to control the fully equipped DX-80. All digital voice switching and call processing data switching is accomplished via the CPM.

The CPM has one ribbon cable connector for connection to the KSU1 408M and five (5) connector sockets for connection of the system built-in modem, voice processor and 2nd Cabinet (KSU2). Since the CPM comes installed inside of KSU1 the CPM ribbon cable is already in place and connected to the KSU1-408M J5 socket. Assuming the orientation of the KSU1 cabinet is installed on the wall; the two horizontal connector sockets in the upper right corner of the CPM are for the MDM (Modem Module). The connector socket labeled "2nd Cabinet" is for connection to the KSU2-408E if that expansion is required. The remaining two connector sockets on the CPM, one at the left side, the other at the right side are for the voice processor solution. (The voice processor solution can be any of three possible choices; AAM, FL-4 or PC-8.)

The CPM also provides the following standard connectors:

- Music Channel 1 - On Hold/Background Music Interface
- Music Channel 2 - On Hold/Background Music Interface
- Control Contact (Loud Bell / Door / External Page Control)
- External Paging Equipment Interface
- RMP Serial Port - for on-site PC-DBA system database programming
- SMDR Serial Port - for connection to ancillary SMDR/Call Accounting equipment

The CPM has two Option Strap jumpers one for database start-up (J11) and one for Music Channel One source (internal/external) selection (JP30).

J11 Cold Start/Normal: J11 is used to force load database default factory settings. This jumper will normally never require operation after the initial power up sequence is completed. However should the need arise to return the site database to the factory settings this jumper is used to accomplish the task.

JP30 Internal/External: JP30 is used to select the Music Channel 1 source. The DX-80 provides a synthesized music source for music on hold in applications where no music source is available. The synthesized tune is repeated. JP30 is in the "External" position when it ships from the factory.

408M (KSU1 component)

The 408M is the large circuit board that is packaged inside of KSU1. The 408M provides interface for up to 4 loop-start CO Lines and 8 Digital Extension Ports. Additionally the 408M regulates the 24 volt DC power from the source to produce all required logic voltages and operations voltages. There is also a Power Failure Port located on the 408M that is connected to the first CO Line circuit. Whenever power fails this port becomes active with dial tone from the CO line connected to the first CO line port.

The 408M is equipped with a Heart-beat LED that indicates processing activity on the PCB. (The 408M peripheral processor is operating when the Heartbeat LED is flashing.) The KSU1 operation LED (located next to the power switch) is tied to the 408M Heartbeat LED. Therefore, when the LED next to the power switch is flashing, the 408M is active.

The KSU1-408M has three ribbon cables; one at the upper right and oriented in a horizontal position (J1) is used to interface a COM4 if required to expand the system CO Line capacity. The other two ribbon cables located at the upper center and oriented in a vertical position. J4 is used to interface the DX-80 CPM. J5 connects to the standard APM4 installed in KSU1.

Each CO line circuit incorporates over-voltage protection, ring detector, loop detector, loop/pulse-dial relay, current sink circuit, coupling/isolation transformer (impedance 600:600), hybrid circuit, CODEC & filter, polarity guard circuit and Radio Frequency noise filter.

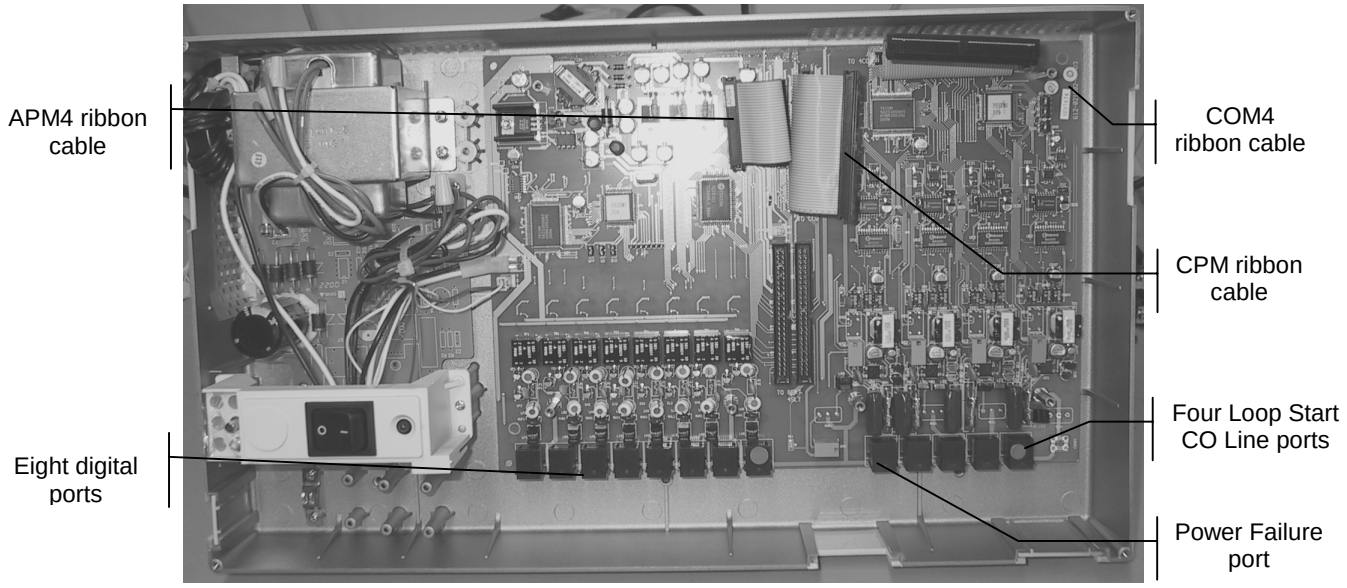


Figure 2: KSU1 shown with cover, CPM and APM4 removed. (408M exposed)

The fourth CO Line port is equipped with CNG Fax Tone Detection circuitry. When programmed as a "FAX" line, this circuit will automatically engage the FAX Tone detector. If FAX tone is detected, the call is routed to the analog port designated as the destination for fax calls.

Each digital port (connects to Digital Executive Telephones and DSS Consoles) is comprised of a proprietary octal ASIC (Application Specific Integrated Circuit) transceiver. There are three data channels in operation at each digital port via the octal transceiver. One channel is used for call processing control of digital terminal functions/operations and two channels are used for the digital voice channel requirements.

Each digital station interface is protected against circuit wiring shorts by an over-current protection Polyswitch. The digital station circuit requires only one cable pair to operate and is not polarity sensitive.

Physical connection of digital extensions, power failure telephones and CO lines to the 408M module is made through convenient RJ-11 connectors along the bottom edge of the module.

408E

The 408E is very similar to the 408M, however it is unique to KSU2. The 408E (KSU2 component) provides interface for up to 4 loop-start CO Lines and 8 Digital Extension Ports. Additionally the 408E regulates the 24 volt DC power from the source to produce all required logic voltages and operations voltages. There is also a Power Failure Port located on the 408E that is associated to the first CO Line circuit. Whenever power fails this port becomes active with dial tone from the CO line connected to the first CO line port.

The 408E is equipped with a Heartbeat LED that indicates processing activity on the PCB. (The 408E peripheral processor is operating when the Heartbeat LED is flashing.) The KSU2 operation LED (located next to the power switch) is tied to the 408E Heartbeat LED. Therefore, when the LED next to the power switch is flashing, the 408E is active.

The KSU2-408E connections are almost identical to those on the 408M (KSU1). The exception is the long shielded cable used to connect KSU2 to the CPM inside of KSU1. (Also notice: that there is no standard APM4 installed inside of KSU2.)

Each CO line circuit incorporates over-voltage protection, ring detector, loop detector, loop/pulse-dial relay, current sink circuit, coupling/isolation transformer (impedance 600:600), hybrid circuit, CODEC & filter, polarity guard circuit and Radio Frequency noise filter.

The fourth CO Line port is equipped with CNG Fax Tone Detection circuitry. When programmed as a "FAX" line, this circuit will automatically engage the FAX Tone detector. If FAX tone is detected, the call is routed to the analog port designated as the destination for fax calls.

Each digital port (connects to Digital Executive Telephones and DSS Consoles) is comprised of a proprietary octal ASIC (Application Specific Integrated Circuit) transceiver. There are three data channels in operation at each extension port via the octal transceiver. One channel is used for call processing control of digital terminal functions/operations and two channels are used for the digital voice channel requirements.

Each digital station interface is protected against circuit wiring shorts by an over-current protection Polyswitch. The digital station circuit requires only one cable pair to operate and is not polarity sensitive.

Physical connection of digital extension terminals, power failure telephones and CO lines to the 408M module is made through convenient RJ-11 connectors along the bottom edge of the module.

APM4 (Analog Port Module - 4 Circuits)

The APM4 provides four separate analog device ports. This allows the DX-80 to support auxiliary office equipment found on the business premises such as fax machines, PC/Mac modems and analog telephones (single line telephones). The APM4 generates -30VDC and 20-25Hz, 50V square wave ringing for operation.

The APM4 is equipped with a Heartbeat LED that indicates processing activity on the PCB. (The APM4 peripheral processor is operating when the Heartbeat LED is flashing.)

The APM4 provides DTMF receivers for each analog port. Ancillary analog devices connected to APM4 analog ports must generate DTMF signaling. (Pulse dial (rotary-dial) telephones/equipment are not supported.) All connections are via RJ-11 connectors along the bottom edge of the module. KSU1 is delivered with one APM4 installed on Ribbon Connector J5 as standard equipment.

APM4's may be installed on 408M/E-J5 (standard in KSU1:408M-J5), 408M/E-J2 or 408M/E-J3. **(Note it is not possible to install an APM4 on both J2 and J3 on any one 408.)**

When an APM4 is installed via J2 or J3, they take the place of DPM8 modules that might be installed in those locations. Therefore APM4 modules installed using J2 or J3 will reduce the total number of Digital Port Modules (DPM8) possible.

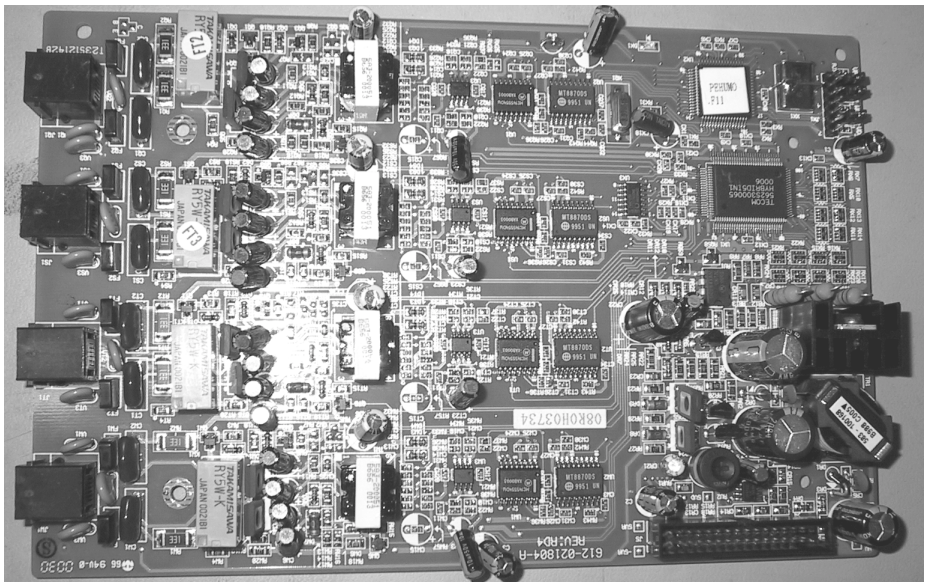


Figure 3: APM4 (Analog Port Module - 4 Circuits)

DPM8 (Digital Port Module - 8 Circuits)

The DPM8 module expands the DX-80 system capacity of digital ports DET (Digital Executive Telephones) and DSS Consoles. Each digital port is comprised of a proprietary octal ASIC (Application Specific Integrated Circuit) transceiver. There are three data channels in operation at each digital port via the octal transceiver. One channel is used for call processing control of digital terminal functions/operations and two

channels are used for the digital voice channel requirements. The DPM8 is controlled directly from the 408M/E (therefore there is no heartbeat LED located on the DPM8.)

Each digital station interface is protected against circuit wiring shorts by an over-current protection Polyswitch. The digital station circuit requires only one cable pair to operate and is not polarity sensitive.

Physical connection of digital port terminals (DET and DSS) to the DPM8 module is made through convenient RJ-11 connectors along the bottom edge of the module. Depending on the site installation requirements the installer may choose to route terminal (station) wiring directly into the KSU cabinet and connect the individual terminal cables to the RJ-11 extension port desired via field crimped RJ-11 plugs. This streamlined installation capability can eliminate the traditional cross-connect field hence reduce costs of installation. **(Be advised that we do not recommend this practice since it is inherently difficult to service. When using field-crimping tools, use quality tools. Cheap tools yield bad connections.)**

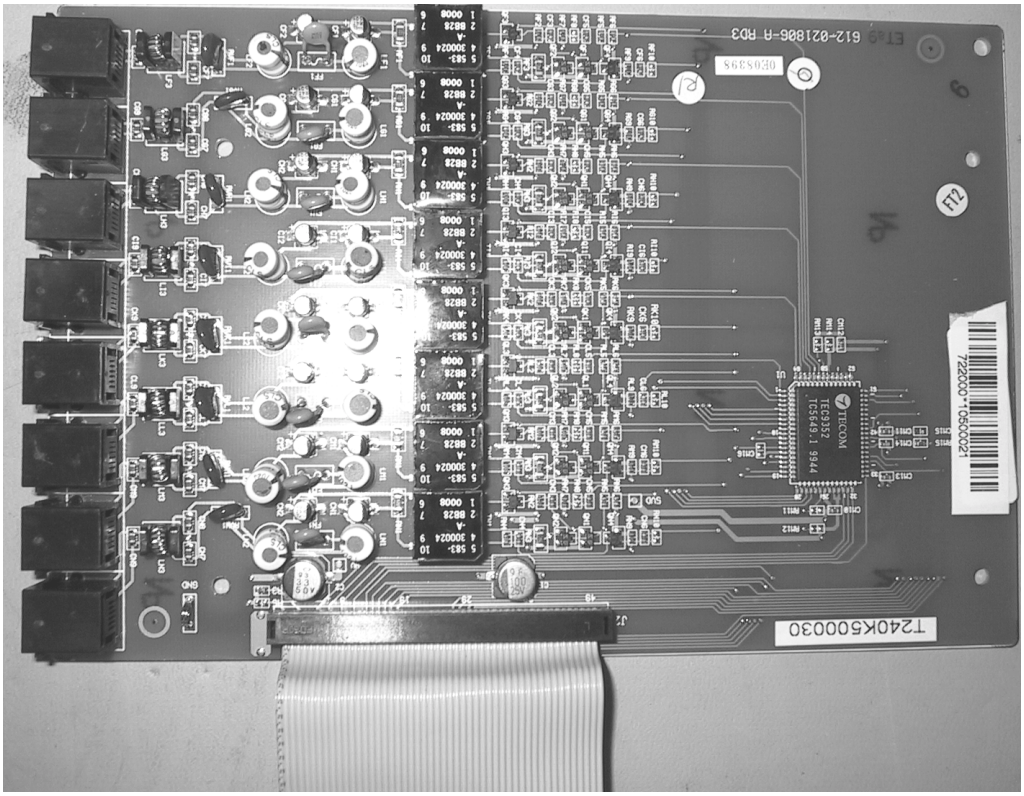


Figure 4: DPM8 (Digital Port Module - 8 Port)

COM4 (Central Office Module - 4 Circuits)

The COM4 module is installed in the dedicated position via J1 of the 408M/E. The COM4 interfaces 4 loop-start CO (Central Office [Telephone Company]) lines. Since one COM4 may be installed in KSU1 and one COM4 may be installed in KSU2, the DX-80 system CO line capacity may be expanded to interface 16 total CO lines.

The COM4 module is shipped with four (4) mounting stand-offs used to install the board into the KSU1 or KSU2. Five RJ11 jacks are provided along the bottom edge of the COM4 module for connection of one power failure telephone and the four CO lines.

CO lines are terminated at the site by the Telephone Company (RBOC or equivalent) at a point of interface called the Demarcation (Demarc). When ordering CO lines for the site, request termination on RJ11 type jacks. Doing so allows CO line(s) to easily be extended to the COM4 RJ11 connector. (One CO line per jack and connector.)

Each CO line circuit incorporates over-voltage protection, ring detector, loop detector, loop/pulse-dial relay, current sink circuit, coupling/isolation transformer (impedance 600:600), hybrid circuit, CODEC & filter, polarity guard circuit and Radio Frequency noise filter.

The fourth CO Line port is equipped with CNG Fax Tone Detection circuitry. When programmed as a “FAX” line, this circuit will automatically engage the FAX Tone detector. If FAX tone is detected, the call is routed to the analog port designated as the destination for fax calls.

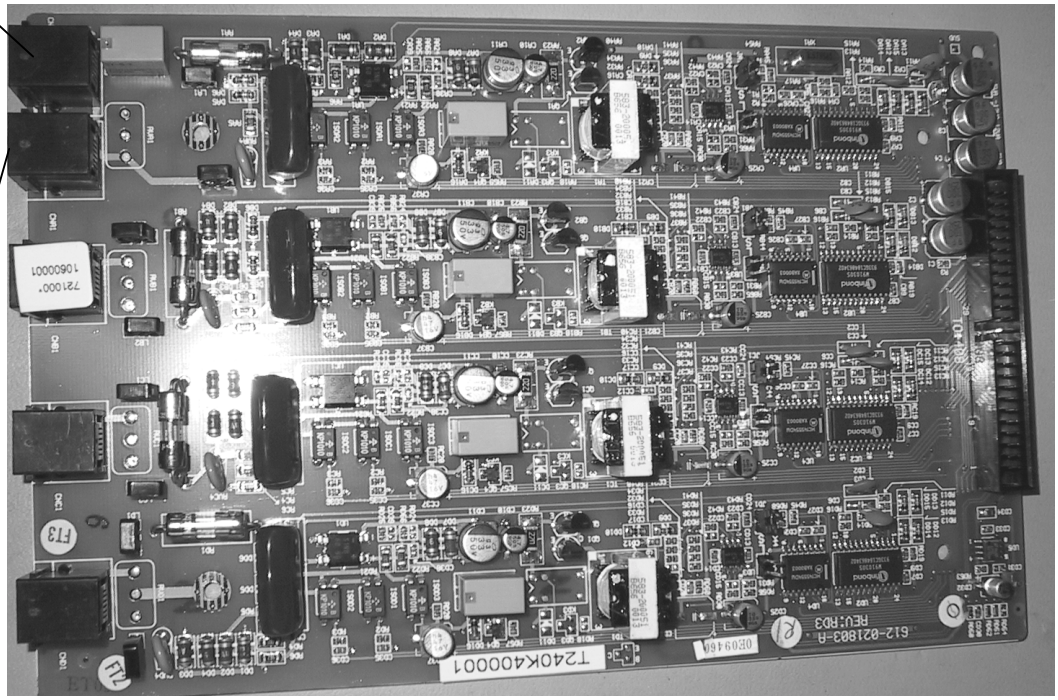


Figure 5: COM4 (Central Office Module - 4 Port)

MDM (Modem Module)

The Modem Module is a self-contained integrated modem unit that is installed at JP5 and JP6 in the upper right corner of the CPM. The integrated Modem Module allows the servicing Telephone Company to access the telephone system programming and remote maintenance utilities from an off-site location (password verification required). When the MDM is used, the remote location programming is done via the proprietary DOS-based PC program “PC-DBA.” This program can be obtained free of charge at the Comdial Web site www.comdial.com or from the Comdial Customer Services Department. (Diskette and shipping charges may apply.)

When installed, the servicing technician uses PC-DBA and a modem (in the PC) to place a call to the site where the DX-80 is installed. If one of the voice processing systems are installed, routing to the modem extension is automated. Otherwise the person who answered this data call must transfer the call to Extension 199*. Once the modems have established the data connection, PC-DBA may be used to perform all servicing operations.

(*The MDM default extension number is 199. This number can be changed and therefore may be different for some DX-80 systems.)

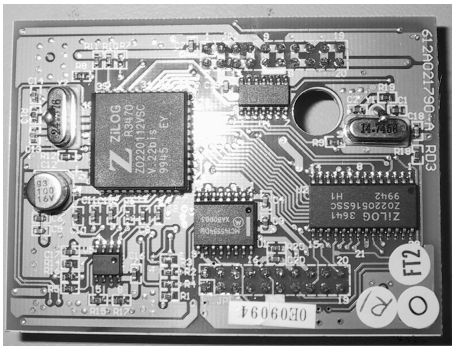


Figure 6: MDM (Modem Module)

AAM (Automated Attendant Module)

The Automated Attendant Module is a self contained integrated module that adds automatic answering of selected CO lines and a single-level menu for greeting callers and routing them to DX-80 system destinations. The AAM is a wonderful low cost voice processing system that can handle all call traffic or act as a backup to the primary answering system attendant.

The AAM is installed at JP3 and JP4 of the CPM (centered above the board).

The AAM provides 10 greetings for the various modes of system/action operation. They are: Day Greeting, Alt Greeting, Night Greeting, Waiting Message, Invalid Message, Busy Message, No Answer Message, Goodbye Message, Inquiry Message and Temporary Message.

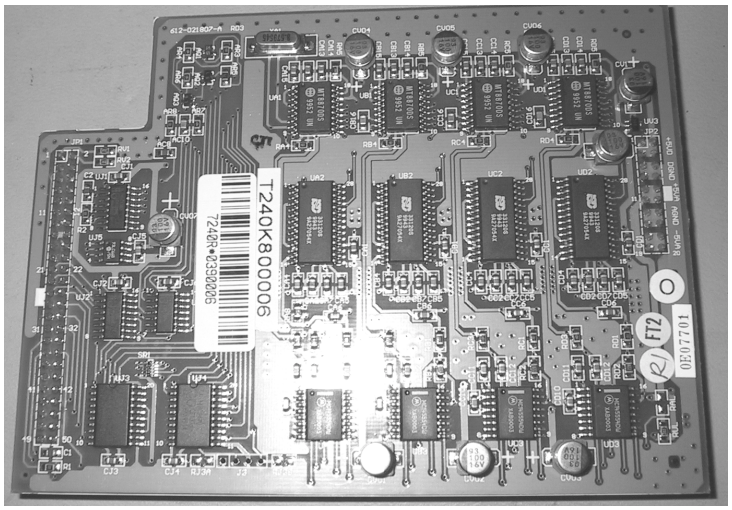


Figure 7: AAM (Automated Attendant Module)

DET (Digital Executive Telephone)

The DX-80 has one model digital telephone. The Digital Executive Telephone is equipped with a half-duplex speakerphone for hands-free conversations and has a two-row by sixteen column (32-character), dot-matrix, Super Twist, Liquid Crystal Display (LCD). Directly under the LCD are three Interactive Buttons to enhance system features operation. During the various features operations these Interactive Buttons *take-on* functions to aid in feature use.

The Super Twist LCD eliminates the need for contrast adjustment and enhances angled viewing position clarity of displayed data. Since the DX-80 includes Caller ID as a standard feature, the LCD also enables every designated ringing extension to receive Caller Identification* data for incoming CO line calls. **(*Note: This feature requires a subscription from the servicing telephone company.)**

The display provides a visual reference to call progress and call duration, as well as time and date information. The display also enables the user to send and receive visual advisory and callback messages. Users may select from six “canned” messages (i.e., “IN A MEETING,” “OUT OF OFFICE”), or they may create a custom message. Calls from other DX-80 telephone users to an extension with a message active will receive the visual advisory message on their LCD display.

Each digital speakerphone has thirty (30) Programmable Feature Buttons to aid the user by providing direct access to system features and resources. There are also three (3) Interactive Buttons and 8† fixed function buttons. **(†Note: the Volume Button Bar represents two operations; volume up and volume down.)**

Each Digital Executive Telephone is equipped standard with a 2.5 millimeter headset jack. The user may toggle his speakerphone operation into an out of a special “Headset Mode”. This mode allows the user to easily activate the headset jack via the ON/OFF button as an alternative to using the speakerphone. Headset mode is easily enabled or disabled so that the user may quickly select between use of the headset or speakerphone operations. (Must be idle to change this setting.)

Each speakerphone is also equipped with a Status Lamp to aid in user operations. The lamp is dual color (red / green) and indicates various modes of operation. (Messages / Voice Messages Waiting, Incoming calls - distinctive for CO and intercom, in-use indication for speakerphone mode and headset mode, and others.)

Figure 8: DET (Digital Extension Terminal)

DSS (Direct Station Selection Terminal)

The DSS Console is a digitally interfaced component of the DX-80. It connects to the system via any available digital port (408M/E or DPM8 digital port). The DSS is equipped with 60 Programmable Buttons. 12 of these buttons are intended for features code storage only and do not have LED indications associated with them. 48 buttons are equipped with dual color (red / green) LEDs and may be assigned any system Feature Code or Directory Number. (These buttons may be assigned for either system features operations or CO line access operations.)

The DSS Console may be mounted in two positions (Lower Profile Desk Position and Wall Mounted Position). DSS Consoles are programmed to operate with an associated speakerphone. Speakerphones

may be assigned up to 4 DSS Consoles each if required. The maximum DSS Consoles supported by the DX-80 is 12. Each equipped DSS Console requires one digital port therefore the total number (system capacity) of speakerphones possible is reduced by one for each DSS console installed.

Figure 9: Direct Station Selection Console (Not available at the time of printing)

Specifications

Current draw:

Use this chart to calculate the Amphour requirements of the DX-80 system based upon its configuration. This information is typically used to apply UPS battery requirements.

Component	Current Draw (Amps) @ 117 VAC	Quantity	Extended Total Amps
KSU1 (7201)	0.18A	1	0.18A
KSU2 (7202)	0.17A	1 max.	
COM4 (7210)	0.02A	2 max.	
DPM8 (7220)	0.01A	4 max.	
APM4 (7230)	0.08A	3 max.	
MDM (7249)	0.01A	1 max.	
AAM (7240)	0.01A	1 max.	
PC-8 (7243)	0.015A	1 max.	
FL-4 (7241)	0.02A	1 max.	
FL3HR (7241E)	0.01A	1 max.	
DET (7260-00)	0.016A	48 max.	
DSS (7266-00)	0.016A	12 max.	
Station wire: per DET, DSS, and IST	0.02A every 100 ft. of 24AWG	?	
Multiply the unit times the quantity installed in the subject application (site) and add the right column for the total current draw (Amps) @ 117VAC for this site……			

System criteria and capacity:

Time Slots:	PCM - 32 time slots x 4 Highways (128 voice channels) TDM 64 Time Slots (data processing)
Customer Database memory protection	300 hours via on-board lithium battery (no charging required)
Ports:	
CO/PBX/Centrex Lines	16
Digital Stations	48
Standard Single Line Telephones	16 (Note: 32 total possible Digital extensions in this configuration.)
DTMF Receivers:	One dedicated per single line telephone port.
DTMF Senders:	Unlimited. (DTMF signal generation is derived from the core system tone resource. Tone combinations are available as needed.)
Tone Detectors: (Used to monitor call progress tones; Busy Tone, Ring-back Tone, etc.)	2 (Shared for advanced call processing system features; DISA, ECF, ABR. etc.)
Contacts:	1 LBC can be programmed as associated to a CO line or dialed by an extension to actuate the contact.
Conference circuits:	8 - 4 party conference circuits.
DISA circuits:	Any number of CO lines may be programmed for DISA operation. (AAM required for operation.)
System Attendants:	1Attendant + 1 Alternate per Tenant Group
Tenant Groups	3
UCD/Hunt Groups:	24
Members per group:	24
Group Types:	UCD or Voice Announcer
Hunting Method:	Linear, All Ring or Distributed
Voice Mail Groups:	1 per Tenant (uses 1 UCD Group per VM system)
Members (ports):	24
Integration Method:	Digital (ICD Voice) and In-band (for other)
VM Message Waiting:	#96 + station number to turn VM button LED on. #*96 + station number to turn VM button LED off.
VM Control codes:	Disconnect Digit(s): 8 digits max. Subscriber Calling via Intercom: 4 digits max. Transfers to VM : 4 digits max. Busy Forward: 4 digits max. No Answer Forward: 4 digits max. Direct Call Forward: 4 digits max. CO Line Recall: 4 digits max. CO Line Ringing: 4 digits max. UCD Overflow: 4 digits max. Record Digits for Voice Recorder function: 4 max. Delete Digits: 4 digits max. Suffix for transferred calls: 2 max.
CO Line Loop Current sensing:	Interrupt programmable from 50ms to 2500ms.

Paging:	8 Internal Page Extension Groups 1 External Page Port 1 Internal All Call 1 System (Internal/External) All Call
Speed Dialing:	1000 total bins, dynamically allocated. 200 bins at default allocated for system-wide use. 20 bins at default allocated for extension use (extensions 101-148 only) (50 possible per extension) 16 digits maximum per bin.
Last Number Redial:	16 digits per station
Save Number Redial:	16 digits per station
User Saved Number (Memo Pad):	20 digits per station
Callback request per station:	1
Camp On by a busy station:	1
Stations Camped on to a station:	1
Stations Camped on to a busy line:	1
Message - Executive Notification:	6 preprogrammed 1 personal per station
Message - Executive Preprogrammed:	6 preprogrammed 1 personal per station
Message Waiting:	40 simultaneous maximum per system (does not affect VM message indications)
Name in Display:	1 per station, 7 characters max.
Class Of Service (COS):	8 (0-7) per Day, 8 (0-7) per Night
Toll Restriction To/From Tables:	100 Tables per tenant, 10 digits per entry, Day and Evening COS assignable per entry per CO Line and Extension.
Forced Verified Account Codes:	600 codes, 2-8 digits max., each assigned a COS
Unverified Account Codes:	8 digits max.
Call Pick Up Groups:	8 Extension Groups.
Station Lock Password:	4-8 digits per extension.
CDB Programming Password:	8 digits ("_____" at default).
System Reminder Alarm:	8 time settings per Tenant Group.
Station Alarm:	1 per station repeating or one time.
Ring Schemes:	8
Distinctive Ring Tones:	8 per station.
External Call Forward:	Via Extension Call Forward settings.

Electrical data:

Electrical Specifications	
AC Power source:	Dedicated 117/230vac ± 15%, 47-63Hz single phase
Power consumption:	1.5A maximum @ 120vac (180 watts)
Power Supply fuse: AC input: DC output:	 2A 250v 1A 125v
Idle Channel Noise	-74 dB
Cross Talk Attenuation	75 dB (@ 1kHz)

Electrical Specifications	
Ringing Sensitivity	40v RMS 25 Hz
Ringer Equivalence Number	1.5
CO Line Signaling	DTMF amplitude (-5 dB,-7 dB) +- 2 dB, @ approx. 2 Vpp Pulse Dialing ratio 60/40 @ 10 PPS
Music source / Background Music	0 dBm at 600 ohm input impedance 1/8th inch phono jack
Contact rating (Option Module LBC):	1A @ 30VDC 0.5A @ 90VAC 30Hz 1/8th inch phono jack
External Page Port	0 dBm at 600 ohms 1/8th inch phono jack

Environmental data:

Environmental Specifications	
Operating Temperature:	0^{o} to 40^{o} C, 32^{o} to 95^{o} F
Recommended Operating Temperature:	70^{o} to 78^{o} F
Storage Temperature:	32^{o} to 104^{o} F
Operating Relative Humidity:	5% to 90% (non-condensing)
Heat Dissipation (BTU):	300

Unit (Component) detail:

Unit Specifications					
Part Number	Description	Dimensions:			Weight
7201/7202	KSU1/KSU2	L W H	460 mm 270 mm 105 mm	18.4 in. 10.8 in. 4.2 in.	4.0Kg
7200	CPM Central Processor Module	L W H	210 mm 138 mm 18 mm	8.25 in. 4.5 in. ¾ in.	0.4Kg
7248	408M Standard 4 CO Line x 8 Digital Extension Module	L W H	210 mm 138 mm 18 mm	8.25 in. 4.5 in. ¾ in.	0.4Kg
7210	COM4 Central Office Module – 4 Port	L W H	210 mm 138 mm 18 mm	8.25 in. 4.5 in. ¾ in.	0.3Kg
7220	DPM8 Digital Port Module – 8 Port.	L W H	210 mm 138 mm 18 mm	8.25 in. 4.5 in. ¾ in.	0.4Kg
7230	APM4 Analog Port Module – 4 Port.	L W H	210 mm 138 mm 21 mm	8.25 in. 4.5 in. 7/8 in.	1.2Kg
7240	AAM Automated Attendant Module	L	210 mm	8.25 in.	1.7Kg

Unit Specifications					
		W H	138 mm 21 mm	4.5 in. 7/8 in.	
7241	FL-4	L W H	210 mm 138 mm 21 mm	8.25 in. 4.5 in. 7/8 in.	0.5Kg
7241E	FL3HR	L W H	210 mm 138 mm 21 mm	8.25 in. 4.5 in. 7/8 in.	0.3Kg
7243	PC-8	L W H	210 mm 138 mm 21 mm	8.25 in. 4.5 in. 7/8 in.	1.7Kg
7249	MDM Modem Module	L W H	234 mm 188 mm 64.5 mm	9.36 in. 7.52 in. 2.58 in.	1.2Kg
7260-00	DET – BK Digital Executive Telephone – Black (LCD Speakerphone)	L W H	230 mm 182 mm 140 mm	9 in. 7.25 in. 5.5 in.	1.7Kg
7266-00	DSS Console – Black	L W H	241 mm 202 mm 93 mm	9.5 in. 8 in. 3.75 in.	1.7Kg

Wiring data:

Maximum Cable Length	
Digital Key Telephone (Distance measures in linear feet of cable from KSU to DET.)	26 AWG - 255m (850 ft.) 24 AWG - 425m (1416 ft.) 22 AWG - 700m (1983 ft.)
Standard Single Line Telephone (Distance measures in linear feet of cable from KSU to IST.)	26 AWG - 195m (650 ft.) 24 AWG - 340m (1133 ft.) 22 AWG - 476m (1586 ft.)

Signaling (Central Office-PSTN) data:

Dialing Specifications	
DTMF Dialing mode:	
Frequency deviation:	± 1%
Rise time:	3ms
Duration of DTMF signal:	programmable 50-150ms (70ms default)
Inter-digit time:	programmable 50-150ms (70ms default)
VM Port DTMF duration:	programmable 60-150ms (120ms default)
VM Port Inter-digit time:	programmable 60-150ms (120ms default)
Pulse Dialing mode:	
Pulse dial rate:	10 pulses per second
Pulse Make/Break ratio:	60/40

Regulatory data:

FCC Registration Numbers	
For systems configured for Key System operation (each CO line appears on its own dedicated button).	D6XTAI-40144-KF-T
For systems configured for hybrid operation (CO lines may be accessed by dial codes and Pool/Loop buttons).	D6XTAI-40145-MF-T

Signaling (internal) data:

Audible Signals		
Signal	Frequency	Cadence
CO Line Ringing:		
Scheme 0	N/A	300ms On, 400ms Off, 300ms On, 4 seconds Off
Scheme 1	N/A	1 second On, 3 seconds Off
Scheme 2	N/A	1 second On, 3 seconds Off
Scheme 3		follows ring cadence of Ring Scheme selected
Scheme 4		follows ring cadence of Ring Scheme selected
Scheme 5		follows ring cadence of Ring Scheme selected
Scheme 6		follows ring cadence of Ring Scheme selected
Scheme 7	-SLT bell-	follows ring cadence of Ring Scheme selected
Distinctive 1		
Distinctive 2		
Distinctive 3		
Distinctive 4		
SLT		
Intercom Ringing:		
Scheme 0	N/A	1 second On, 3 seconds Off
Scheme 1	N/A	1 second On, 3 seconds Off
Scheme 2	N/A	300ms On, 400ms Off, 300ms On, 4 seconds Off
Scheme 3		follows ring cadence of Ring Scheme selected
Scheme 4		follows ring cadence of Ring Scheme selected
Scheme 5		follows ring cadence of Ring Scheme selected
Scheme 6		follows ring cadence of Ring Scheme selected
Scheme 7	-SLT bell-	follows ring cadence of Ring Scheme selected
Distinctive 1		
Distinctive 2		
Distinctive 3		
Distinctive 4		
SLT		
Message Wait Callback		follows ring cadence of Ring Scheme selected

MTBF (Mean-Time Between Failure) data:

Mean-Time Between Failure Analysis System components	
Cabinet Assembly	86.0
Power Supply Unit	170.0
CPM	2915.7
408M	11407.3
DPM8	3560.8
COM4	6146.5
APM4	6860.2
MDM	761.0
AAM	2337.3
Method: 1. Use the figures above for each unit installed (or to be installed) and calculate the total for this system configuration. 2. Use the total from step 1 in place of the variable "x" in the formula at the right to calculate MTBF for this system configuration.	**$(1 + x)(10^9)$ = MTBF hours**

2. Installation

Proper installation of the Comdial DX-80 will assure optimum system operation and the best overall experience for the users of the DX-80 telephone system. Since the DX-80 system provides communications functions for its users, following these installation guidelines is required. Doing so will streamline the process and reduce the potential of experiencing problems while bringing the DX-80 on-line.

Installation Outline

1. Plan the installation, including the Key Service Unit (KSU1 or KSU1 & KSU2) and main distribution frame (MDF) location, station locations, cable runs, and optional equipment.
2. Assemble the correct tools and supplies. (Telephony tools of the trade. UTP telephony grade cable/wiring. Miscellaneous telephony hardware; *66* blocks, modular wall jacks, etc.)
3. Run DX-80 extension cable/wiring for speakerphones, DSS Consoles and analog devices (FAX machines, modems, etc.) from the MDF to each location. (Wiring topology is referred to as *"star-wiring"* configuration; no cable should loop from one telephone location to another.)
4. Run cable/wiring to any optional equipment, such as external paging equipment, loud bell signaling devices, music sources, etc.
5. Mount the MDF backboard and attach the *"punch-down"* (*"66"*) terminal block(s) on the backboard. This documentation adheres to traditional installation practices of telephony equipment using a dedicated MDF with 66 block wiring field to promote full serviceability of the system and connections using proven techniques.

   Alternately, the extension cable/wiring may be routed directly into the DX-80 KSU1/KSU2 housing for connection directly to the appropriate interface module (408M, DPM8, APM4, COM4, CPM). If extension cables are routed into the KSU, each will require termination of one cable pair into standard crimping modular connectors. This method is not recommended due to the inherent lack of serviceability once compete.
6. Terminate extension cables on modular jack assemblies at the terminal locations.
7. Mount the KSU(s) on the MDF backboard. Mounting template provided.
8. Ground the KSU1 (and KSU2 if applicable) to a known "good" earth ground.
9. Install optional expansion modules (COM4, DPM8, APM4) inside the KSU as required.
10. Install optional features modules (AAM, VP1, VP2, VP3, MDM) inside the KSU as required.
11. Route telephone and CO line port interface connections through the appropriate KSU opening (lower left corner) and connect to them to the interface port. The four pair modular plug pre-terminated DX-80 cable can be used to aid in this requirement (PN-724PR).
12. Route ancillary device cabling through the appropriate KSU1 opening and terminate as required (music source, printer/computer for SMDR, external paging equipment, etc.)
13. *Cross-connect* the CO lines and extension ports to extension cables on the corresponding punch-down terminal block.
14. Install the terminal instruments and any optional terminal equipment, such as headsets or single line telephones.
15. **Move the Cold-Start/Normal (RAM memory battery backup) strap from the "Cold Start" position to the "Normal" position. This critical step is detailed in the "Power Up Initialization" topic at the end of this chapter.**
16. Plug the AC power cord into the dedicated AC outlet (or UPS if system battery backup support is required) and power up the DX-80 system by operating the AC power switch to the "ON" position.
17. Observe the power/peripheral processor heartbeat LED for flashing status after 10-20 seconds. This indicates that the main peripheral board is active and that its processor is running. During the first power-up sequence (Cold-Start strap moved to Normal position), default data is loaded which can take as long as 2 minutes. The main processor LED located on the Central Processor Module may be monitored during the boot-up stage to determine when the system is operational. A series of flash rates occur during this process. When default is successfully loaded or whenever the system becomes functional following a power failure, the CPM Heart-beat LED maintains a consistent fast flash rate. The terminal equipment should be operational at this time.

18. Refer to the specific feature descriptions section of this manual for operation and programming information.

Site Planning

Establishing Suitable Environmental Conditions for the System

- Place KSU1 (and KSU2 if applicable) within 5 feet (1.5 meters) of an isolated, dedicated, 105-125VAC, 57-63Hz, 15A, single-phase commercial power source.

  Note: This must be an isolated, dedicated AC circuit for proper operation. All three wires (power, neutral, and ground) must be run separately from the outlet to the breaker panel without being bonded to any other wire or circuit. Do not plug any other equipment into this outlet. To maintain the protection provided by the isolated, dedicated circuit, the length of the AC power cord limits the distance between the KSU and the outlet. Do not use an extension cord.

- To protect the system from lightning damage or other AC power line disturbances, a surge protector should be installed.
- Select the KSU location to minimize cable run length. Terminal Equipment connected to the system must not exceed specified limits (see overview Specifications).
- The KSU location should not be exposed to direct sunlight, high humidity, heat, dust, or strong magnetic fields (such as those generated by heavy motors, copy machines and some kitchen appliances).

  IMPORTANT! The DX-80 system must be installed in a climate controlled environment. When equipped with optional voice processing modules, the system takes on the characteristics of a mechanically driven computing storage device. (A computer with a hard disk drive.)

  This equipment cannot function in environments above 95 degrees Fahrenheit ambient temperature.

- The MDF should consist of a 3/4-inch plywood backboard large enough to mount all hardware and equipment allowing all components ample space for adequate ventilation and servicing. Allow additional room for external apparatus, if used.
- For cooling purposes, ample air space (at least four inches on the top, bottom, left and right sides) should be provided for the KSU.
- SMDR/SMDA output device(s) must be placed within 50 feet (15 meters) of the KSU (limited by RS-232C standard wiring practices).

  The equipment should be located in a climate-controlled room adhering to the Environmental Specifications listed in the Overview section of this manual.

  Note: When installing the KSU and station instruments, allow a sufficient margin for error in case of air conditioning failure, routine maintenance, plant shutdown, etc. As a general rule, if conditions are suitable for office personnel, they are also suitable for KSU and terminal equipment operation. A properly controlled environment will help to extend the operating life of the equipment.

  From **UL 1459**, a product safety specification governing telephone equipment:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network's interface.
- Use caution when installing or modifying telephone lines.

Tools and Supplies

- Assemble the correct supplies and tools to install the Comdial DX-80 as it is intended.
- Use UTP (Unshielded, Twisted-Pair) three or four pair (recommended) cable to run from the MDF (Main Distribution Frame) to all extension terminals (speakerphones, DSS Consoles and analog devices). Digital terminals only need one twisted pair to operate. (Additional pairs are always recommended to allow for future potential uses.)

- Six conductor modular jack assemblies for all station instruments (recommended).
- Standard punch-down terminal block(s) (66M1-50 type) as required.
- Four or six conductor crimping modular plug assemblies for each port interface. **Or, a better choice is to use DX-80 PN "RJ11-4P" cables to extend DX-80 ports to the MDF**.
- AC voltage surge/spike protector.
- Standard telephone hand tools and mounting hardware for the KSU(s), MDF backboard, punch-down terminal block(s), modular jack assemblies for CO lines, etc.

Preparing the Main Distribution Frame

The Main Distribution Frame (MDF) is the point at which the KSU, terminal equipment, CO lines, and miscellaneous equipment are connected to one another. It is extremely important that the connections be made carefully and accurately.

Assembling the MDF

Follow these steps to assemble the MDF.

1. Mount a sufficiently sized 3/4-inch plywood backboard at the proper location for use as the MDF termination and equipment mounting board.
2. Plan the layout of all required MDF components allowing for expansion. This may include: KSU1, KSU2, 66M1-50 termination blocks, cable fastening hardware, and miscellaneous third-party communications equipment (paging equipment, etc.)
3. Locate the Telco provided CO/Centrex lines at the DEMARC (Demarcation) and extend them to the MDF location.
4. Locate a suitable, known-good earth ground preferably within 10 feet of the MDF and route a **#10AWG grounding wiring** from the point of grounding to the MDF for connection to the KSU.
5. Install all terminal device wiring (telephone cabling) and route to the MDF location for termination.
6. Mount all equipment and termination hardware as required to complete interconnection of terminal devices and KSU modules.

KSU Components and Installation

The Key Service Units are shipped in their own protective master carton and contain the following components:

KSU1

- 1 mounting template
- 1 System Installation & Features Manual
- 1 Quick Start-up Guide
- 1 Programming Guide
- Standard 408M (Module) equipped with 8 digital extension ports, 4 CO Line ports, and 1 CO Line PFT (Power Failure Transfer) port.
- Standard CPM (Central Processor Module)
- Standard APM4 (Analog Port Module – 4 port)

KSU2

- 1 mounting template
- Standard Expansion Cabinet 408M (Module) equipped with 8 digital extension ports, 4 CO Line ports, and 1 CO Line PFT (Power Failure Transfer) port.

Open the carton(s) and verify that all items are complete and undamaged. Remove all packing material and store for future use in the event that return shipment is required.

Mounting the KSU

Follow these instructions to mount the KSU.

1. Select a suitable location for the KSU1 considering that the expansion (KSU2) may be installed at the same time or sometime in the future. KSU1 and KSU2 may be mounted such that they are side-by-side or mounted one above the other.

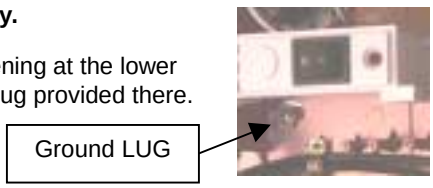
Side-by-side

One above the other

2. Using the mounting template as a guide, mark the two (2) mounting screws locations on the MDF backboard.
3. Pre-drill two (2) screw holes and install the two, pan-head No. 10 screws (supplied) into the backboard with a regular screwdriver. The screw heads should protrude about 1/4-inch from the backboard plywood surface.
4. Lift the KSU over the two screws allowing the screws to extend into the KSU slotted mounting holes. As the KSU is allowed to rest in place on the mounting screws it will slip over the screw shanks until the top of the slot is reached. Properly installed, the KSU power transformer (where the KSU AC power cord is located) is positioned in the upper left corner. The power switch and Power/Heartbeat LED are positioned at the left side of the KSU toward the bottom.

   Note: It is very important that the KSU be correctly mounted to allow proper power supply heat dissipation. KSU1 and KSU2 are intended to be wall mounted only.

5. **Ground the KSU.** Extend the earth ground #10 wire into the KSU opening at the lower left corner of the KSU. Terminate the grounding wire onto the ground lug provided there.



KSU Wiring

Note: System power should be OFF before plugging in the station cable or while servicing port connections at the punch-down block (66M1-50). (Although each port is over-current protected, unnecessary shorting should be avoided.)

The 408M/E, APM4 (Analog Port Module), COM4 (CO Line Module) and DPM8 (Digital Port Module) are equipped with RJ-11 modular jacks for each of the interfaced ports. This connection scheme allows for two methods of installation. The first method (traditional "MDF") is recommended whenever possible to allow for maximum serviceability.

MDF (Main Distribution Frame)

Whenever the various ports of the DX-80 are extended to the MDF, modular ended cables must be extended from the KSU module port to the MDF connection block. The installer has many choices when completing these connections and it is left to the installer's discretion to use the most suitable industry standard wiring practice for the particular installation.

Note: **Whenever field-crimped modular connectors are used, USE A QUALITY CRIMPING TOOL to fasten the modular connector to the cable pair. Use a cheap tool…expect bad connections!**

Many third-party vendor products are available to aid in this installation procedure. The examples below are readily available at communications equipment / accessories supply houses. Although this example denotes product of The Siemon Company®, the installer is urged to investigate the various products available and make decisions for use based on his / her own assessment. (Comdial is not responsible for the performance of any product provided by a third-party (outside) vendor.)

The examples in the following chart are 25 pair (UTP), USOC, 24 AWG cables pre-fitted with modular connectors on one end of the cable and a male or female AMP® type connectors on the other end for termination on a specially equipped, 66-block with mating AMP® type connector.

The Siemon Company® Hydra Cable Assemblies		
Product Number	**Length (feet)**	**Wiring Scheme - End 1**
HYD-F-24U1-03	3	25-Pair, Female
HYD-F-24U1-07	7	25-Pair, Female
HYD-F-24U1-10	10	25-Pair, Female
HYD-M-24U1-03	3	25-Pair, Male
HYD-M-24U1-07	7	25-Pair, Male
HYD-M-24U1-10	10	25-Pair, Male

When the KSU wiring is complete, each port of the DX-80 system may individually be isolated for independent maintenance needs. The wiring in place is then terminated onto a 66M1-50 – connector block(s). From this connector block - ports are extended to station cables using standard jumper wire.

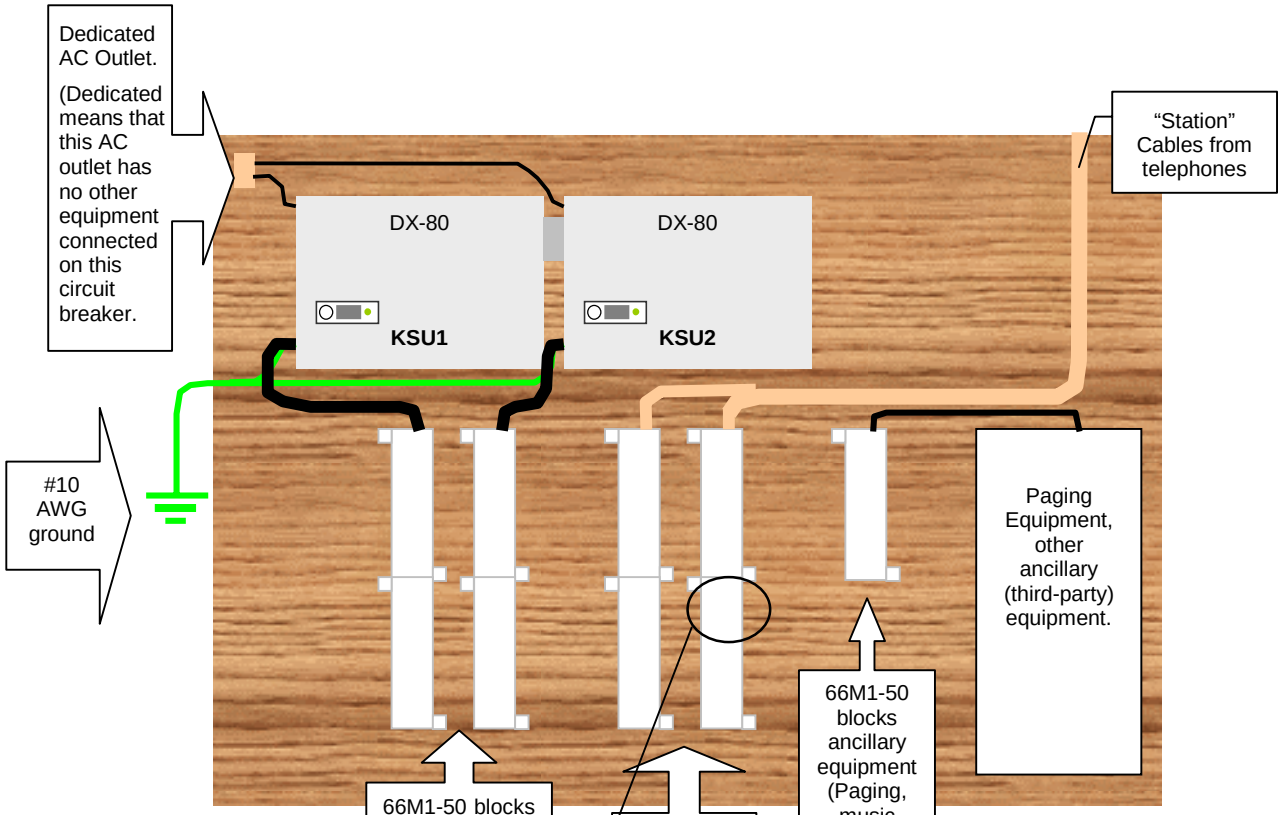
No MDF

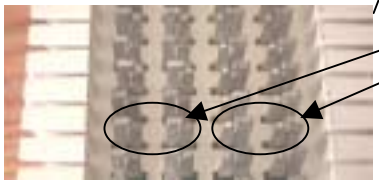
Since the Comdial DX-80 is equipped with RJ-11 interfaces for all port connections, it is possible to route station cables into the KSU directly without use of 66M1-50 connector blocks. Using quality modular connectors and crimping tool, each terminal cable can be connected directly to the port required. This method of installation although initially convenient and less expensive, is not recommended due to the inherent lack of serviceability.

Regardless of the method used, station / MDF cables are routed out of the KSU through the opening at the lower left of the KSU housing. A cable restraint clamp is provided and may be used to secure cables exiting the KSU.

Typical MDF Installation

The example install below illustrates a two-cabinet installation using the MDF installation method.





66M1-50

The 66M1-50 is split into a left half and right half for wiring terminations.

Each row is conductive between the left two columns and the right two columns. This is the source of the term "Split 50."

Terminate cable pairs from the KSU and from telephone locations on outer column pins, one lead only per pin.

NEVER terminate two wires on one pin!

This is referred to as "double-punching" and causes poor connection of wires on the terminal.

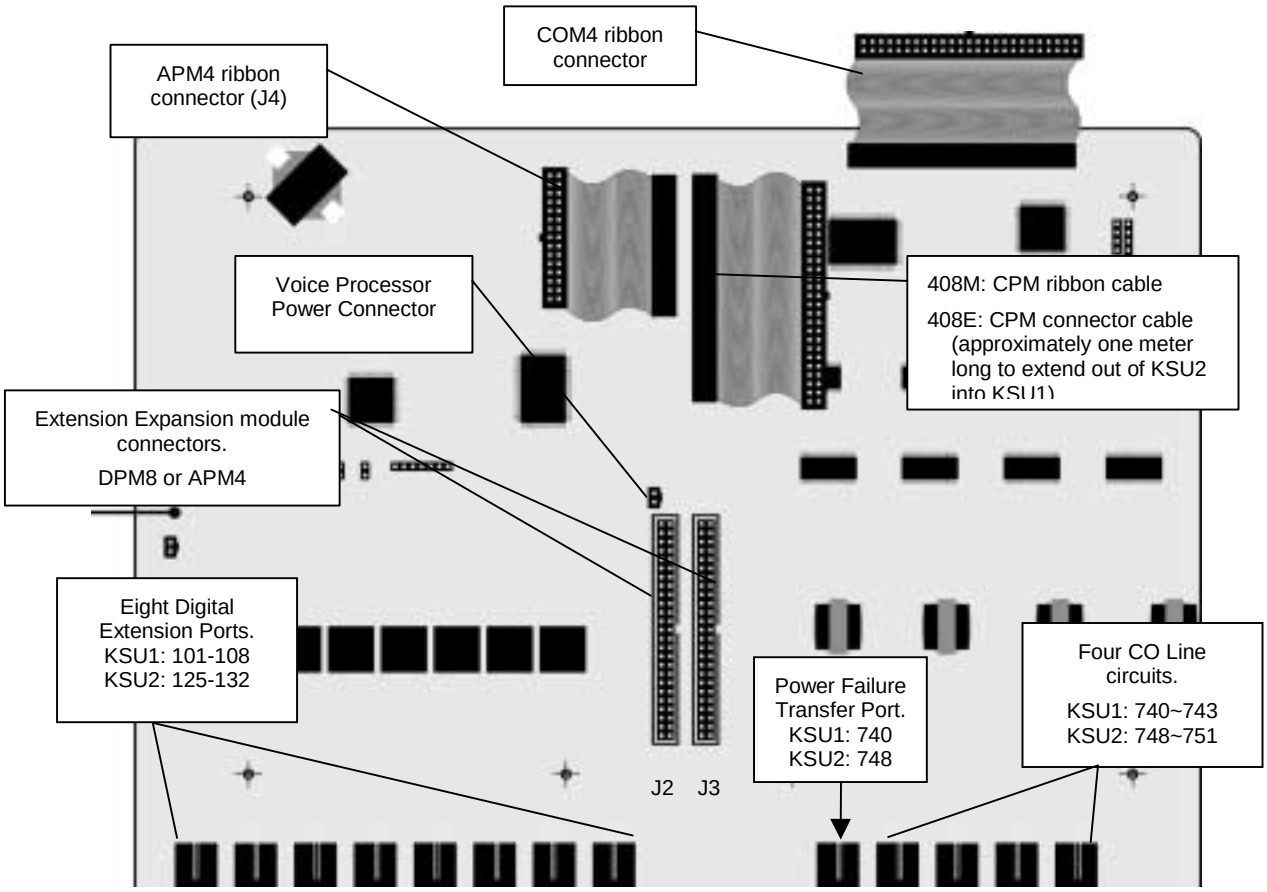
(**Note:** When used with "Bridging Clips," the Split 50 block can be used to isolate trouble in wiring.)

KSU Components

KSU1 408M and KSU2 408E

The 408M module is installed at the factory into KSU1. Although this module has the same port configuration as the 408E, they are not interchangeable. Each 408M and 408E is equipped with 4 CO Line Ports, 1 Power Failure Port, and 8 Digital Extension Ports. See the following diagram to locate the various ports provided on the 408M/E.

The 408M/E is also the interface point for the various add-on modules of the DX-80 system. All peripheral modules connect to the DX-80 via the 408M/E. See Diagram X as a reference of the various interface connectors.



Replacing a 408 M / E

Occasionally, when instructed to do so by a Comdial technical support representative, it may be necessary to remove a 408M or 408E and replace it in the field. Do this by following the steps below.

1. Be sure that the entire system is turned off.
2. Remove the KSU cover (four screws at each corner).
3. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE**: A GROUNDED WRIST STRAP IS THE ONLY METHOD OF ASSURING THAT STATIC CHARGE DOES NOT DAMAGE CIRCUIT MODULES.)
4. Remove all circuit modules from the KSU cabinet. All modules are fastened in place using standoff hardware. Notice: be sure that stand off placement is re-constructed when the various modules are re-

installed. (APM4 modules must be installed using 2.5 cm stand offs. These specific length standoffs are steel color for easy identification.)

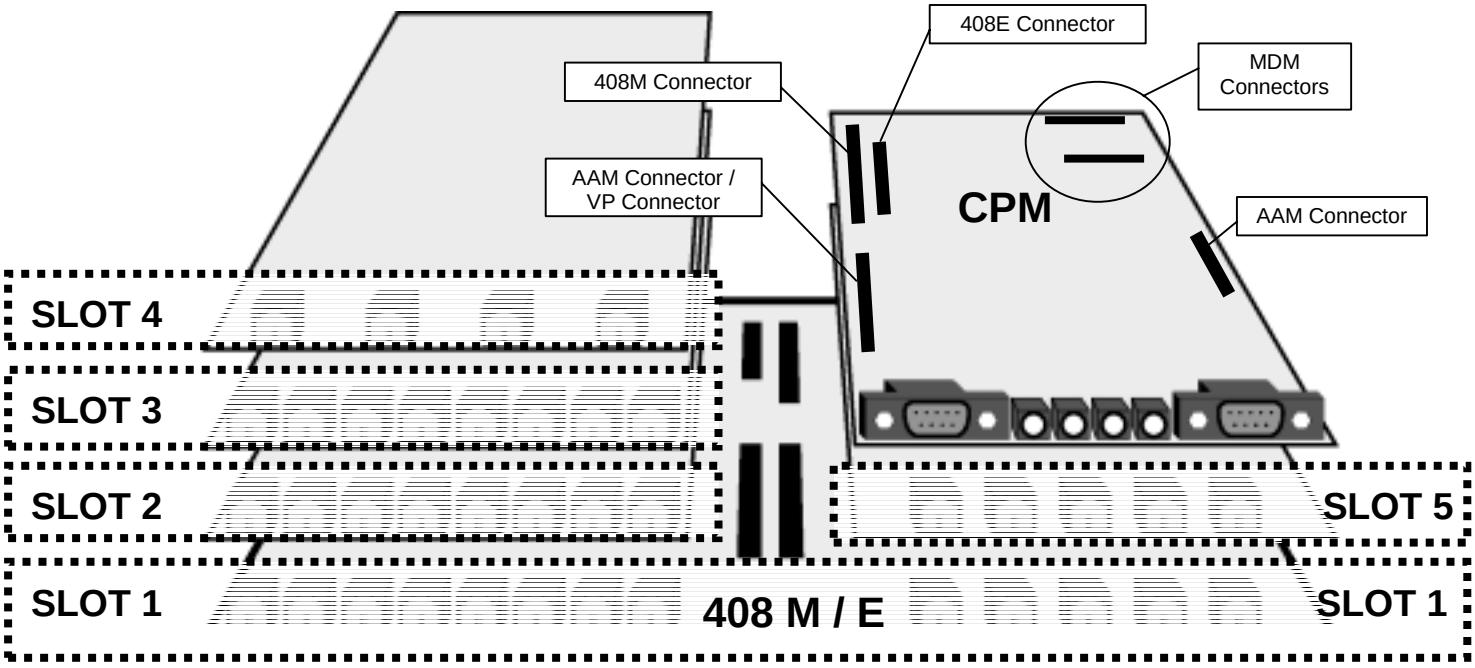
5. Install the replacement 408M/E using the brass (2.0cm) standoffs removed from the original.
6. Install all other remaining modules in the order that they were removed, connecting them to the appropriate 408M/E connector.
7. Reconnect CO Line and Station cabling connections as required.

NOTE:	The FCC requires that wiring of CO Lines into a Key Service Unit be separated from wiring of station apparatus into a Key Service Unit. Therefore the installer must use a separate cable for wiring of stations and CO Lines.

8. Replace the KSU cover and secure with cover screws.
9. Restore KSU power when all wiring is complete.

KSU Assembly – Add-on Modules

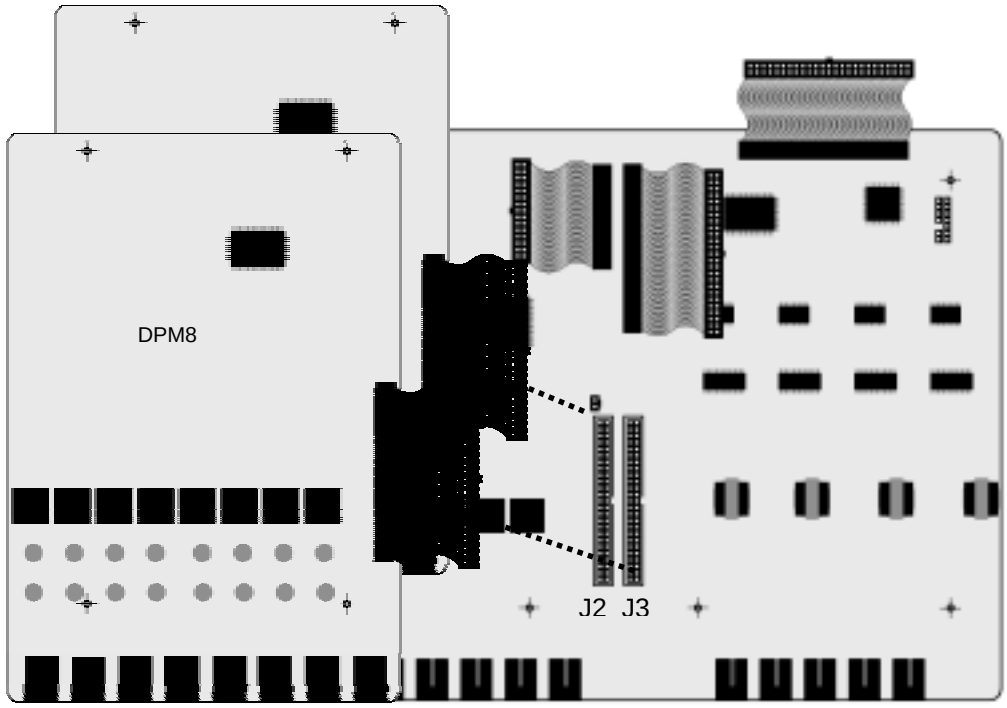
Whenever the DX-80 system is expanded, a module must be installed into one of the KSU cabinets. Modules are connected to the various connectors on the 408M/E. Modules are mounted using standoff posts. Two standoff post sizes are used in the DX-80. The APM4 modules must be installed using the nickel color 2.5 cm standoffs. All other modules use brass color 2.0 cm standoffs. Proper use of standoff is imperative to assure proper system operation.



Adding a DPM8 (Digital Port Module – 8 port)

Two DPM8 (Digital Port Module, 8-port) modules can be added to each KSU of the DX-80 system. These modules expand the DX-80 system extension capacity to a maximum of 24 digital ports in each KSU (48 total digital ports).

DPM8's are installed by connection to the 408M/E via the Extension Expansion module connectors ("J2" and "J3.") These connectors have the logical system address of **SLOT 2** and **SLOT 3** in both **Cabinet 1** (KSU1-408M) and **Cabinet 2** (KSU2-408E). (APM4 and DPM8 modules may be connected to the system via these two connectors.) DPM8's are installed using four (4), 2.0 cm brass color standoffs included with the DPM8 module.



DPM8 Extension Number Matrix Per Installed Location		
KSU Connector Used	**Extension Numbers in KSU1**	**Extension Numbers in KSU2**
J2 Extension Expansion	109,110,111,112, 113,114,115,116	133,134,135,136, 137,138,139,140
J3 Extension Expansion	117,118,119,120, 121,122,123,124	141,142,143,144, 145,146,147,148

DPM8 Installation Procedure

1. Be sure that the entire system is turned off.
2. Remove the KSU cover (four screws at each corner).
3. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE ONLY METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
4. Remove the DPM8 module from the packaging and locate the four brass-color standoffs packaged with the module.
5. Position the DPM8 over the left-hand side of the 408M/E and any other extension modules already installed. (When installing DPM8 modules, it is recommended that they be installed closest to the 408M/E. That is, if

an APM4 module is installed move it outward (toward cabinet cover) and install the add-on DPM8 first then reinstall the APM4.)(Extension modules are always installed on the left-hand side, in the KSU.)

6. Use the four brass-color standoffs supplied with the DPM8 to secure the DPM8 in position.
7. Connect the DPM8 ribbon cable to the 408M Extension Expansion Module Connector closest to the DPM8. Press firmly (but not forcefully) on the connector to secure a good connection.
8. Make connections to the 8 digital ports as required.

NOTE:	The FCC requires that wiring of CO Lines into a Key Service Unit be separated from the wiring of station apparatus into a Key Service Unit. Therefore the installer must use a separate cable for wiring of stations and CO Lines.

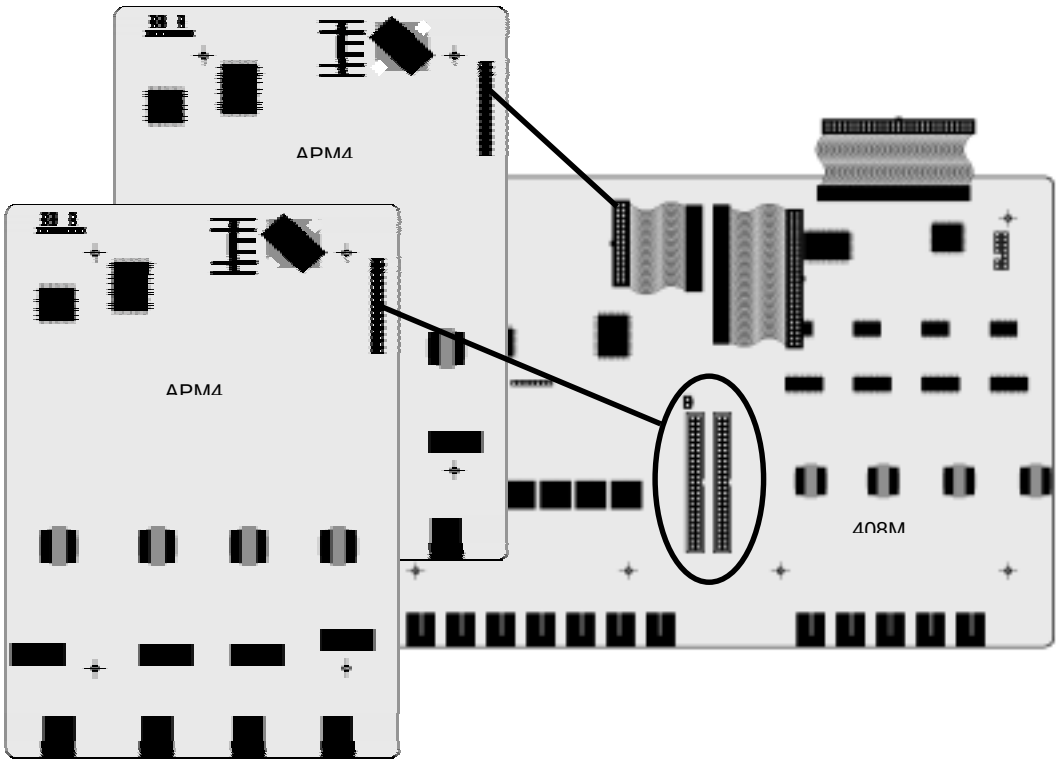
9. Replace the KSU cover and secure with cover screws.
10. Restore KSU power.

Adding an APM4 (Analog Port Module – 4 port)

One APM4 (Analog Port Module, 4-port) can be added to KSU1 and two APM4's can be added to KSU2. These modules expand the DX-80 system extension capacity to a maximum of 8 analog ports in each KSU (16 total analog ports when used in both KSU 1 & 2).

When adding an APM4 to KSU1, it is installed by connection to the 408M via an available Extension Expansion module connector (either "J2" or "J3" but not both). These connectors have the logical system address of **SLOT 2** and **SLOT 3** in both **Cabinet 1** (KSU1-408M) and **Cabinet 2** (KSU2-408E). APM4's are installed using four (4), 2.5 cm nickel-color standoffs.

When adding APM4 modules to KSU2, one may be installed on either of the Extension Expansion module connectors and one may be installed on the dedicated APM4 Module Connector. This connector has the logical system address of **SLOT 4** in both **Cabinet 1** (KSU1-408M) and **Cabinet 2** (KSU2-408E).



Extension Number Matrix Per Installed Location			
KSU Connector used	**Extension numbers in KSU1**	**Extension Numbers in KSU2**	**Notes**
APM4 Connector **(SLOT 4)**	149,150,151,152	153,154,155,156	KSU1 analog ports are standard
J2 Extension Expansion **(SLOT 2)**	109,110,111,112	133,134,135,136	Since the profile of the APM4 module is higher than the other modules, only one Extension Expansion connector can be used for APM4 modules.
J3 Extension Expansion **(SLOT 3)**	117,118,119,120	141,142,143,144	

APM4 Installation Procedure

1. Be sure that the entire system is turned off.
2. Remove the KSU cover (four screws at each corner).
3. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE ONLY METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
4. Remove the APM4 module from the packaging and locate the four nickel-color standoffs packaged with the module.
5. Position the APM4 over the left-hand side of the 408M/E and any other extension modules already installed. (Extension modules are always installed on the left-hand side, in the KSU.)
6. Use the four nickel-color standoffs supplied with the APM4 to secure the APM4 in position.
7. Connect the APM4 ribbon cable to the 408M/E Extension Expansion Module Connector closest to the APM4. Or in KSU2, connect the dedicated APM4 ribbon cable from the 408E to the APM4 module (and discard the packaged ribbon cable). Press firmly (but not forcefully) on the connector to secure a good connection.
8. Make cable/wiring connections to the 4 analog ports as required.

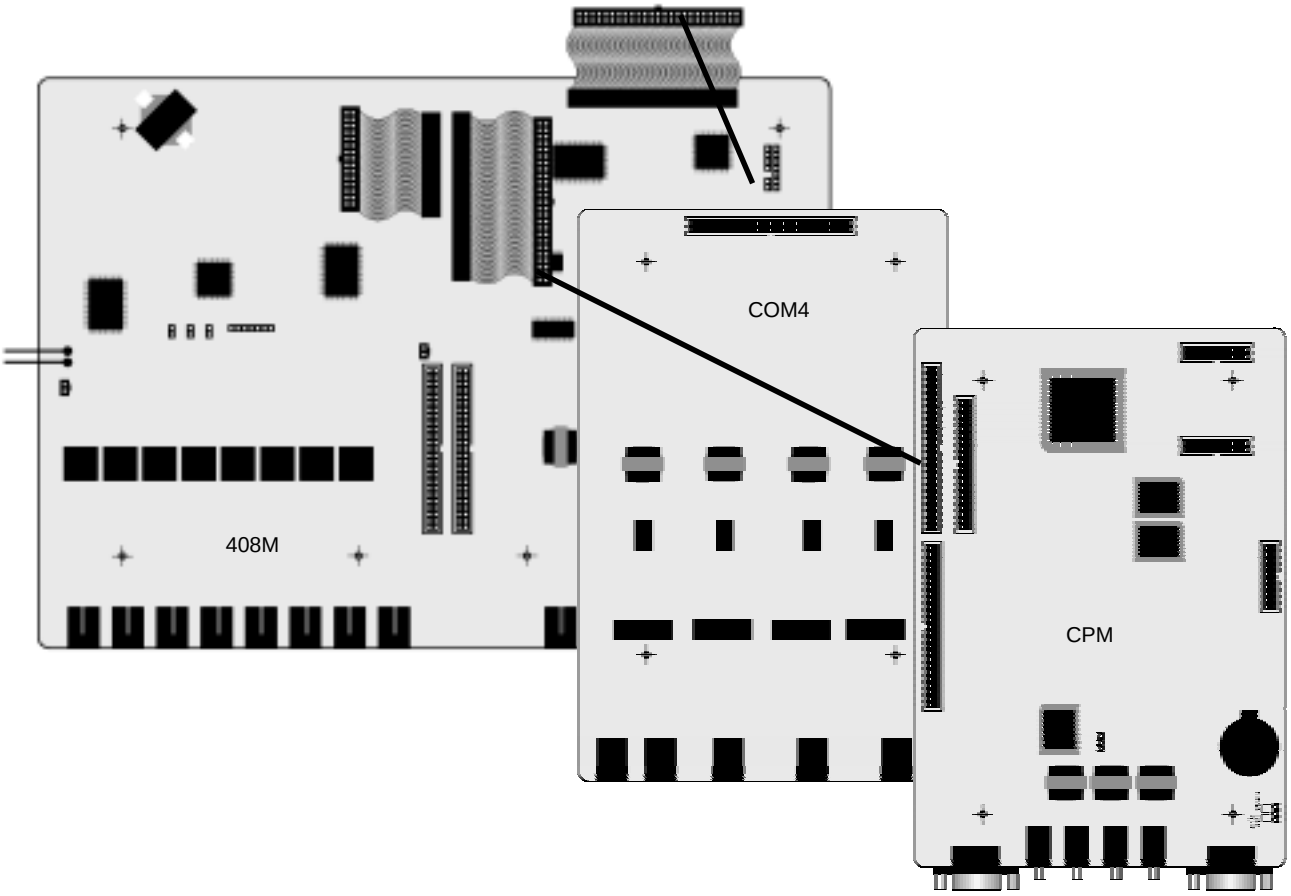
NOTE:	The FCC requires that wiring of CO Lines into a Key Service Unit be separated from wiring of station apparatus into a Key Service Unit. Therefore the installer must use a separate cable for wiring of stations and CO Lines.

9. Replace the KSU cover and secure with cover screws.
10. Restore KSU power.

Adding a COM4 (CO Line Module – 4 port)

One COM4 (CO Line Module, 4-port) can be added to KSU1 and one COM4 can be added to KSU2. These modules expand the DX-80 system CO Line interface capacity to a maximum of 8 CO Line ports in each KSU (16 total CO Line ports when used in KSU 1 & 2).

When adding a COM4 to either KSU, it is installed by connection to the 408M/E via the COM4 module ribbon cable. This ribbon cable has the logical system address of **SLOT 5** in both **Cabinet 1** (KSU1-408M) and **Cabinet 2** (KSU2-408E). COM4 modules are installed using four (4), 2.0 cm brass-color standoffs. The COM4 module should always be installed beneath the CPM module (in KSU1) by first removing that module, installing the COM4 then reinstalling the CPM. (This is required whenever the PC-8 Voice Processor is installed.)



CO Line Directory Number Matrix Per Installed Location			
408M in KSU1 SLOT 1	**COM4 in KSU1 SLOT 5**	**408E in KSU2 SLOT 1**	**COM4 in KSU2 SLOT 5**
740,741,742,743	744,745,746,747	748,749,750,751	752,753,754,755

COM4 Installation Procedure

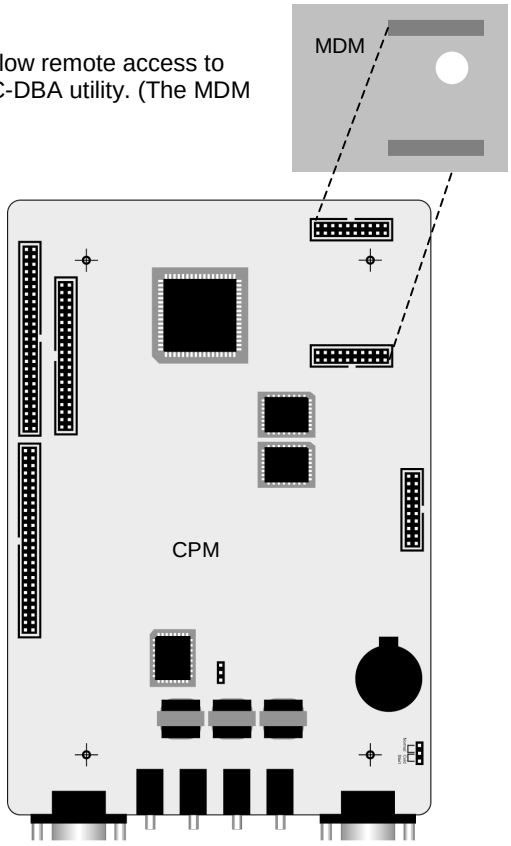
1. Be sure that the entire system is turned off.
2. Remove the KSU cover (four screws at each corner).
3. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE ONLY METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
4. We recommend installing the COM4 closest to the 408M/E. This means that the CPM must be temporarily removed then repositioned above the COM4 once it is installed (in KSU1). For KSU2 installation skip step 5 and proceed with step 6.
5. Remove the installed CPM by removing the four brass standoffs used to secure the board. Retain these standoffs for later use. Remove the ribbon cable that connects the CPM to the 408M then set aside.
6. Remove the COM4 module from the packaging and locate the four brass-color standoffs packaged with the module.
7. Position the COM4 over the 408M/E (right-hand side) where the CPM was just removed (KSU1).
8. Use the four brass-color standoffs supplied with the COM4 to secure the COM4 in position.

9. Connect the COM4 ribbon cable from the 408M/E to the COM4 connector. Press firmly (but not forcefully) on the connector to secure a good connection. For KSU2 installation, skip step 10 and proceed to step 11.
10. Reposition the CPM over the installed COM4 and secure using the four brass-color standoffs removed in step 4.
11. Make cable/wiring connections to the 4 CO Line ports as required.

NOTE:	The FCC requires that wiring of CO Lines into a Key Service Unit be separated from wiring of station apparatus into a Key Service Unit. Therefore the installer must use a separate cable for wiring of stations and CO Lines.

12. Replace the KSU cover and secure with cover screws.
13. Restore KSU power.

Adding an MDM (Modem Module)



One MDM (Modem Module) can be added to KSU1. The Modem Module will allow remote access to the DX-80 telephony system database and Maintenance functions using the PC-DBA utility. (The MDM does not provide access to the DX-80 DX-SO Voice Mail/AA.)

At default the MDM directory number is “199.” To establish a connection to the MDM remotely, call into the system (where the MDM is installed) from the remote site using PC-DBA. Ask to be transferred to extension 199. When modem tone is heard, initiate any required keystrokes to link the modems. Then proceed with usual PC-DBA connection routines (see Database Administration – via PC-DBA).

The MDM is installed onto designated connectors located on the CPM.

MDM Installation Procedure

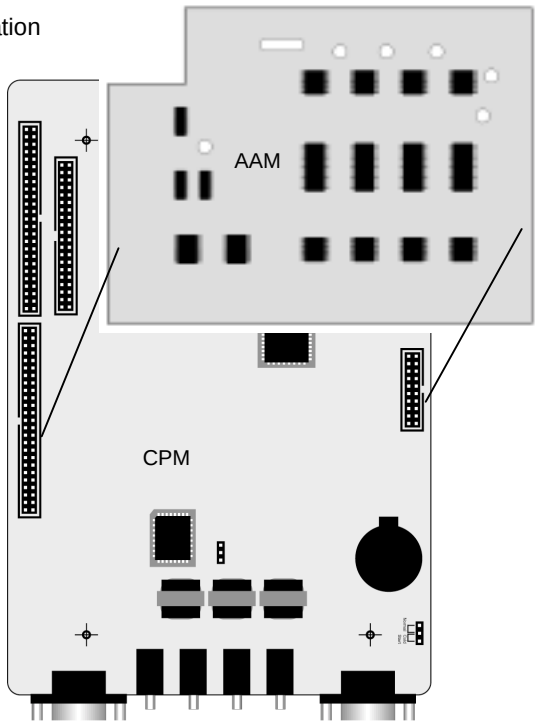
1. Be sure that the entire system (KSU 1&2) is turned off.
2. Remove the KSU cover (four screws at each corner).
3. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE ONLY METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
4. Locate the CPM at the right-hand side of KSU1 above the 408M (and COM4 if installed).
5. Position the MDM over the CPM-MDM connectors as illustrated in the diagram above.
6. Press firmly (but not forcefully) on the MDM to secure a good connection into the CPM-MDM connectors.
7. Replace the KSU cover and secure with cover screws.
8. Restore KSU power.

Adding an AAM (Automated Attendant Module)

One AAM (Auto Attendant Module) can be added to KSU1. The AA Module adds automated attendant functionality to the DX-80 system with 10 integrated announcements. (The AAM does not provide voice mail functions.)

Refer to the specific feature description “Automated Attendant” for information about announcements and programming CO Lines to be answered by the AAM.

The AAM is installed onto designated connectors located on the CPM.



AAM Installation Procedure

1. Be sure that the entire system is turned off.
2. Remove the KSU cover (four screws at each corner).
3. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE ONLY METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
4. Locate the CPM at the right-hand side of KSU1 above the 408M (and COM4 if installed).
5. Position the AAM over the CPM-AAM connectors as illustrated in the diagram above.
6. Press firmly (but not forcefully) on the AAM to secure a good connection into the CPM-AAM connectors.
7. Replace KSU cover and secure with cover screws.
8. Restore KSU power.

Adding a KSU2 (Key Service Unit-2, second cabinet)

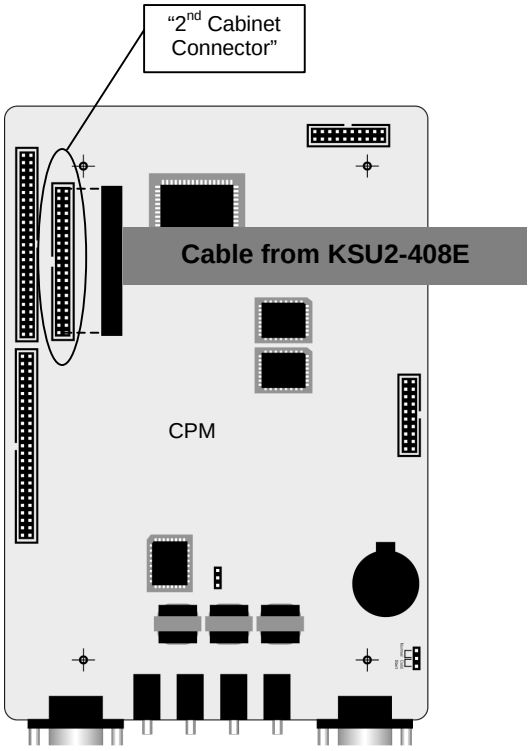
One KSU2 (Key Service Unit-2) can be added to KSU1. The KSU2 adds:

- 8 (eight) digital DX-80 extension ports
- 4 (four) CO Line ports
- 1 (one) Power Failure Transfer port
- Extension Expansion connectors for 2 addition DPM8 or 1 APM4
- Ribbon cable for one APM4
- Ribbon cable for one COM4

KSU2 is connected to KSU1 via a designated connector located on the CPM inside of KSU1.

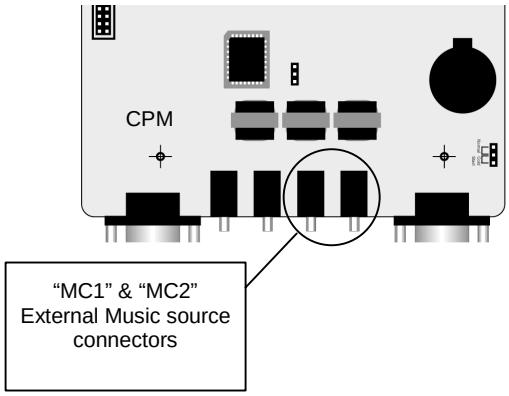
KSU2 Installation Procedure

1. Be sure that the entire system is turned off.
2. Remove the KSU cover (four screws at each corner) on both KSU1 and KSU2.



3. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
4. Locate the long cable attached to the 408E of KSU2 and route it out of the KSU cabinet into the KSU1 cabinet for connection on the CPM.
5. Locate the CPM at the right-hand side of KSU1 above the 408M (and COM4 if installed).
6. Position the KSU2 connection cable over the CPM-"2nd Cabinet Connector" as illustrated in the diagram above.
7. Press firmly (but not forcefully) on the KSU2-Cable connector to secure a good connection into the CPM-"2nd Cabinet Connector.
8. Replace the KSU cover and secure with cover screws.
9. Restore KSU power by powering both KSU cabinets at the same time. (Operate both cabinet power switches to the "ON" position simultaneously.

Adding a Music Source(s)



Two sources of music can be connected to the CPM of the DX-80 system for use with the features: Music On Hold and Background Music. (Optionally, an internal musical tune or tone can be used for callers on hold. When this option is used, the MC1 connector is not used.)

To select the internal music tune for use on music channel MC1:

1. Remove the KSU cover (four screws at each corner) of KSU1.
2. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
3. Locate the CPM and "MUSIC" option strap.
4. Move the "MUSIC" option strap (JP30) from the "EXT" (factory position) to the "INT" position.

To install an external music source to either MC1 or MC2 or both:

1. Remove the KSU cover (four screws at each corner) of KSU1.
2. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
3. Locate the CPM and the "MUSIC" option strap.
4. Make sure that the "MUSIC" option strap is in the "EXT" position. (Required for external source to operate on MC1.)

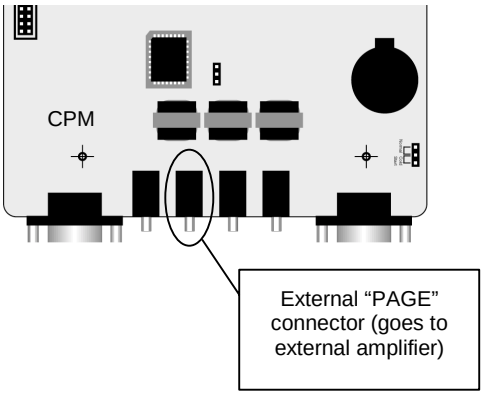
5. Locate CPM the “MC1” and “MC2” connector jacks on the CPM.
6. Using an eighth-inch mini plug, connect the output of the external music source to the appropriate MC1 or 2 connector. (At default MC1 is used for Music On Hold.) This is easily accomplished using a prefabricated mini-plug to mini-plug cable available at Radio Shack.

7. Adjust the music volume level at the external music source. When adjusting the music for Music On Hold, place a call into the system on one of the CO Lines. Place this call on hold so that the external music source is heard by the calling party (you). Adjust the volume level of the external music source until a desirable level is reached. (Background Music is then adjusted at the telephone using the instrument volume control.)

Adding an External Pager (paging system)

One port is provided at the CPM of the DX-80 system for use with external paging system apparatus. When DX-80 users dial the external pager code (“777” at default) or dial the Tenant Group All Page code (“400” at default), voice announcements can be made over the external paging equipment.

The DX-80 External Page port does not provide any amplification. Interface at the amplifier should be matched to approximately 600 ohms for the best performance.



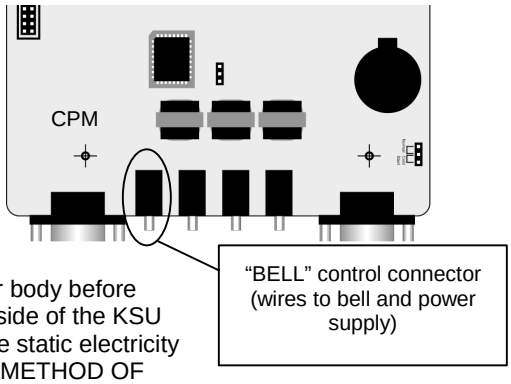
External Pager Installation Procedure

1. Remove the KSU cover (four screws at each corner) of KSU1.
2. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
3. Locate the CPM and “PAGE” connector jack on the CPM.
4. Using an eighth-inch mini plug, connect the DX-80 Page port to the external amplifier input.

5. Adjust the voice volume level at the external paging amplifier. When adjusting the volume level, dial access to the External Pager port at any DX-80 telephone (“777”). Then adjust the volume control associated to the amplifier input selected for this purpose.

Adding Loud Bell Control or Gate Control

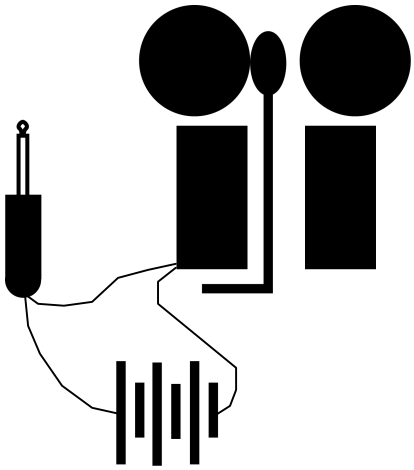
One “dry-connection” is provided at the CPM of the DX-80 system for use with external ringing devices or door opening apparatus. The DX-80 can be programmed to activate the dry contact whenever certain CO Lines ring or whenever the LBC code is dialed to actuate a door opener.

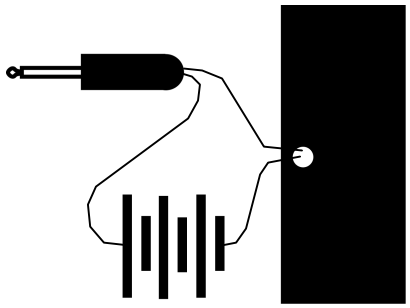


Loud Ringing Bell Installation Procedure

1. Remove the KSU cover (four screws at each corner) of KSU1.
2. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
3. Locate the CPM and “BELL” connector jack on the CPM.

4. Using an eighth-inch mini plug, wire the DX-80 BELL contact in series with an external 24vdc power supply and 24vdc bell or ringing device. **Important: Use only 24v or less voltage supply and Direct Current (dc).**
5. Program LBC operation for CO Line ringing according to CO Line Group assignments. See Loud Bell Control in the features description section of this manual.
6. To control a gate or door:
7. Remove the KSU cover (four screws at each corner) of KSU1.
8. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
9. Locate the CPM and "BELL" connector jack on the CPM.
10. Using an eighth-inch mini plug, wire the DX-80 BELL contact in series with an external 24vdc power supply and 24vdc door opening device. **Important: Use only 24v or less voltage supply and Direct Current (dc).**
11. Program LBC operation for External Page operation. Door/Gate operation is accomplished by dialing the External Page code (this code can be programmed onto an available Flexible Feature Button). See Loud Bell Control in the features description section of this manual.





Connecting a Serial Cable for PC-DBA

PC-DBA (PC-Database Administration) can be connected the to DX-80 system for use to set all user database programable features and system operations. (See Database Administration – via PC-DBA.) This connection is rarely permanent and is typically performed only during routine systems database updates and changes by a qualified technician. Connection of the PC to the DX-80 is accomplished through the serial data port on the CPM labeled "PCDBA." Connection is simplified by means of a *straight-through*, 9-pin, female to male, serial cable. (Use Radio Shack model 26-117B for good results.)

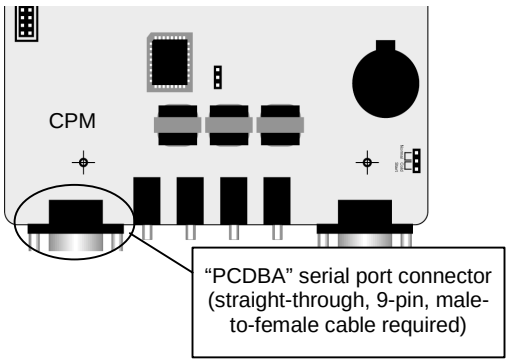
Connection to the PC is made via an available 9-pin serial port connector that is designated as COM1 or COM2 in the PC configuration.

Once the cable is linked between the PC and the DX-80 CPM, PCDBA port, PC-DBA can be used to program the DX-80 system and backup the user database.

Serial Cable Installation Procedure

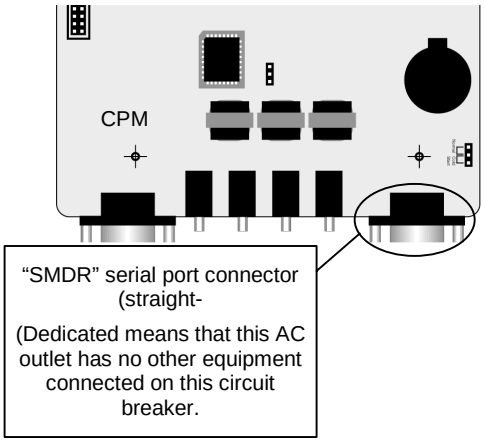
Follow these steps to connect a serial cable for PC-DBA:

1. Remove the KSU cover (four screws at each corner) of KSU1.
2. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
3. Locate the CPM and "PCDBA" serial port on the CPM.
4. Connect the male end of the 9-pin serial cable into this PCDBA port.
5. Connect the other end (female) of the 9-pin serial cable to the PC serial port to be used with PC-DBA.
6. Refer to the instructions for operating PC-DBA in the features section of this manual.



Connecting a Serial Cable for SMDR

SMDR (Station Message Detail Recording) can be output from the DX-80 system for use with serial printers of collection in call accounting devices. Connection of the SMDR device to the DX-80 is accomplished through the serial data port on the CPM labeled “SMDR.” Connection to serial printers may require customization of the serial cable used to make the connection.


CPM
“SMDR” serial port connector (straight-
(Dedicated means that this AC outlet has no other equipment connected on this circuit breaker.

Whenever a call accounting system (third-party device) is deployed, connection is often no more complicated than using a *straight-through*, 9-pin, female to male, serial cable. (Use Radio Shack model 26-117B for good results.)

Connection to the PC/call accounting system is made via an available 9-pin serial port connector that is designated as COM1 or COM2 in the PC configuration.

Once the cable is linked between the collection device and the DX-80 CPM-SMDR port, the collection device must be programmed for compatible link protocol (baud rate). (At default the SMDR port baud rate is set at 9600 bps.)

SMDR 9-pin Serial Cable Pin Designations								
1	2	3	4	5	6	7	8	9
DCD	RXD	TXD	DTR	GND	DSR	RTS	CTS	RI

Serial Cable Installation Procedure

1. Remove the KSU cover (four screws at each corner) of KSU1.
2. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
3. Locate the CPM and “SMDR” serial port on the CPM.
4. Connect the male end of the 9-pin serial cable into this SMDR port.
5. Connect the other end (female) of the 9-pin serial cable to the PC/collection device serial port.
6. Replace the KSU cover.

Power-up Initialization

Proper operation of the DX-80 system requires that the system be initialized at the time of start up. **The installation of the DX-80 is complete only when this critical operation is performed.** Occasionally it may be required to perform this initialization process after the original installation, but this is rare.

Initialization causes the operational customer database to be established and organized for system operation and future updating. At the time this procedure is complete the default database contents are loaded into operational memory. The system is ready to run on this database configuration. Customized changes may be made to this database according to the allowable program settings for the various features.

Initialization Procedure

1. System power must be OFF.
2. Remove the KSU cover (four screws at each corner) of KSU1.
3. Connect grounded wrist strap to a suitable earth ground. (If a grounded wrist strap is not available, bleed any static charge from your body before touching circuit modules by touching the gold-painted surface of the inside of the KSU cabinet. If the KSU is properly grounded this will momentarily discharge static electricity from your body. **NOTE:** A GROUNDED WRIST STRAP IS THE BEST METHOD OF ASSURING THAT STATIC ELECTRICITY DOES NOT DAMAGE CIRCUIT MODULES.)
4. Locate the CPM and "NORMAL/COLD START" option strap on the CPM (J11).
5. Move this strap to the "COLD START" position and allow it to remain in this position for 5 seconds. (**Note:** New systems are shipped with this strap in the "COLD START" position, therefore this step can be skipped.)
6. Move the strap to the "NORMAL" position.
7. Turn ON the power supply to the system by moving the ON/OFF switch to the ON position on KSU1 and KSU2 (if two installed) simultaneously.

CAUTION!	A qualified telephony technician only should perform this procedure since hazardous voltages are present inside the KSU cabinet! DO NOT TOUCH exposed terminals or fuse connections at or around the power supply and fuse area while the system is powered and the KSU (cabinet) cover is removed!

8. Observe the LED on the CPM (at the left side of the module). The LED should begin to flash slowly.
9. The LED located at the ON/OFF button of the KSU follows the operation of the LED on the 408M. Both of these LED's indicate the operation of the peripheral processors on the 408M.
10. The LED on the APM4 will also begin to flash indicating that its peripheral processor is running.
11. As the main CPU comes on-line it will detect the Cold Start status of a specially blocked memory address. Once this is detected, default data is forced into operational memory. **(Note: This procedure overwrites all customized customer programming.)** During this detection and force loading of data, the CPM LED will flash at various fast rates then stabilize again at a consistent rhythmic rate. Once this consistent rate is reached the system has begun operations and the telephones should be functional.

    Default data is now loaded and operational. In this status all CO Lines will ring at extension 101, all extensions may take and place calls and all systems features are operational per their default configuration.

    Custom programming of features may now begin to meet the specific needs of this user.

3. Features

The DX-80 system has a variety of features designed to provide maximum call handling efficiency and flexibility. This section details these features, which appear alphabetically.

Account Code – Voluntary / Forced / Verified 7PQRS 9WXYZ

Account Codes can be entered at any extension voluntarily to record an association of the call in progress in detailed records output from the DX-80 system (SMDR). Alternatively, an extension may be **Forced** to enter an account code to make certain LINE calls or before any LINE calls can be made. The account code length is predetermined and programmed to be from 2 to 8 digits. When Forced to use an account code, the extension is restricted to certain call criteria via that extension's programmed Class of Service. This initial Class of Service is bypassed by entering an Account Code that is assigned a new Class of Service. This Class is in effect for the duration of consecutive use at this extension. (Note: This new Class may itself have some level of restriction.) When **Forced**, Account Codes are verified against those codes listed in the Account Codes Table.

Related Features

Extension Toll Restriction
Auto Line Select
SMDR (Station Message Detail Recording)

Related Programming

Restriction – Toll Restriction – Digit Intervals
Restriction – Toll Restriction – Account Codes
Extension – Day/Eve Class
System Application – Numbering Plan – Account Code

Operation

1. Dial the Account Code Directory number 7PQRS 9WXYZ. The display will prompt you to enter a valid account code.
2. Enter a valid account code (considering digits programmed and programmed length of account code).
3. The DX-80 system will automatically access an idle CO Line and assign the Class of Service associated to the entered account code for use on this call.
4. Dial the appropriate telephone number. (If this number is allowed by the entered account code, the call will be completed. Otherwise, error tone will be heard and the call will be terminated.)

Conditions

a) If you dial an invalid account code, you will hear error tone and the account code procedure will be terminated.
b) When you dial a valid account code, the call is monitored for toll restriction against the Class of Service associated to the entered Account Code.

Programming Abstract

- Designate the length for account codes. This single setting determines the length of account codes for the entire system. The account code length can be from 2 to 8 digits.
- Assign Account Codes. Up to 600 unique account codes may be assigned. Each is given a specific Class of Service to allow the associated dialing criteria established in that Class Of Service (see Toll Restriction).

Default Setting

Account Code length - 2 digits (Range is 2-8.)
Account Codes - None programmed (Range is any numeral 0-9, maximum of 8 digits.)
Account Code Class of Service - 0
Account Code Disabled - N

Extension Classes of service - all calls allowed
Account Code Access Code - 79

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 05-02.
- Press [save].
- Press [show]. The Account Code database item "LENGTH" displays.
- Press [chg] (change) until the appropriate account code length displays.
- Enter the new length and then press [save].
- Press [next]. The account code database item "PASSWORD" displays.
- Press [show]. The ID Number of the account code to be changed is required.
- Enter the account code number 001-600 to change/display.
- Press [show]. The existing programming displays. ("NULL" = empty.)
- Press [chg].
- Enter the account code using the digits 0-9 on the dial pad. When the correct number of digits are entered (according to the designated length), press "save." This database item is then updated.
- Press [next]. The Class of Service for this account code displays.
- Press [chg] until the appropriate Class displays for this account code password.
- Press [next]. The item "DISABLED" displays. This setting is used temporarily disable the use of a particular Account Code without removing its programming. "DISABLED" means that this account code is active.
- Press [chg] to select "**Y**" or "**N**" to disable this account code password.
- Press [next] to continue programming other account codes. Or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter. The program title page displays.
- Press any key at the program title page to enter the Main Menu.
- Select PC-DBA from the Main Menu. The PC-DBA menu is then shown.
- Select Programming from the PC-DBA menu.
- Use ↓ ↑ → ← to highlight "RESTRICTION" and then press Enter.
- Use ↓ ↑ → ← to highlight "Account Code Table" and then press Enter. The cursor is now positioned on the database item - account code "LENGTH."
- Press Enter to change this item. Or move the cursor to another item. Note: Changing the account code length will delete all previously programmed account codes!
- Move the cursor as required to the database item to be changed.

- Press [Enter] to select database items for input. Database items that toggle will indicate the new settings each time [Enter] is pressed.
- When you have completed all changes, press the [Esc] (escape) key to exit this database programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press [Esc] (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: changes made via PC-DBA are NOT updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming Guide section of this manual to learn more about this procedure.

Alarm Clock – Extension

FEATURE 9WXYZ 2ABC

You may activate your own private alarm on your telephone to remind you of special appointments, events, etc. When the alarm activates you will hear tone ringing for a programmable period from 10 - 600 seconds. After the programmable period the alarm is automatically canceled. You may program the alarm for one time or always. When programmed for always, the alarm will sound at the same time everyday.

Related Features

Distinctive Ringing

Related Programming

Attendant System Mode – Time
Call Handling - Alarm Play Time

Operation – Activate

Note: [chg], [bksp], [save], [one], [always], [del] and [ack] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

1. Press FEATURE 9WXYZ 2ABC.
2. Enter an extension number and press [show]. If an alarm alert time is not programmed, it will display (NULL=none).
3. Press [chg], to enter a new alarm alert time.
4. Enter time for alarm alert, HHMM, where HH is hour, MM is minute (24 - hour clock).
5. Press [save]
6. Select [one], for a one- time alarm, or [always], for repeated operation at the selected time on a daily basis. You hear the confirmation tone and soon the display returns to idle.

Analog Ports (Single Line Telephones)

1. Dial # 9WXYZ 2ABC.
2. Enter time for alarm alert, HHMM, where HH is hour, MM is minute (24 - hour clock).
3. Enter 1 for once or 2ABC for repeated daily.

Operation – Notification

1. When the alarm time is reached, the alert tone is heard and the display will show:

   ALARM REACHED
   ack

2. Press [ack] button to stop the alarm alert or the alert will end automatically when the database [Alarm Play Time] has expired.
3. When the alarm alert has ended automatically, the display will continue to show [ALARM REACHED], [ack] until the user invokes some other action or presses the [ack] button.

Operation – Deactivate

1. Press FEATURE 9WXYZ 2ABC.
2. Enter an extension number and press [show]. If an alarm alert time is not programmed, it will display (NULL=none).
3. Press [del].

Analog Ports (Single Line Telephones)

Dial # *TONE 9WXYZ 2ABC.

Conditions:

a) The Alarm Clock feature code (FEATURE 9WXYZ 2ABC) may be programmed under any programmable flexible feature button.
b) The alarm clock will be automatically canceled after the programmed Alarm Play Time is reached.
c) The display will be unchanged until [ack] is pressed or when the telephone is used for another call.

Default Setting:

No Extension Alarm times are set.
Alarm Play Time is set at 30 seconds.

Programming Abstract:

- Set the system time and date to the correct local time and date.
- Set the Alarm Play Time for the time that the alert tone should be repeated when the set alarm time is reached.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # *TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-19.
- Press [save].
- Press [chg] (change) until the appropriate Alarm Play Time displays (in seconds).
- Press [back] or [next] to continue programming. Or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing [DX-80] at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.
- Use ↓↑→← to highlight [CALL HANDLING], then press Enter.
- Use ↓↑→← to highlight [Category 3, then press Enter. The cursor is now positioned on the database item - [Dial Delay Time].
- Use ↓↑→← to highlight [Extension Alarm Play Time], then press Enter until the appropriate play time is reached.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: [**Exit This Feature**]; press [Y] for yes.
- You will then be prompted to [**Save Current Setting**?]
  - Press [**N**] to abort changes and leave all data unchanged.
  - Press [**Y**] to save changes.
- If you press [**Y**] (yes), you will then be prompted [**File Exists, Override?**]
  - Press [**N**] to abort changes and leave all data unchanged.
  - Press [**Y**] (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: changes made via PC-DBA are NOT updated to the DX-80 system memory until a [SEND] function has been performed. Please refer to the Programming Guide section of this manual to learn more about this procedure.

Alarm Clock – System (System Reminder)

The DX-80 system may be set to alert all Digital Extensions at predetermined intervals during the day. Eight (8) intervals are available for predetermined operation. The “Play Time” is also predetermined and set in the system programming. Play Time dictates how long the music source will be played over the digital extensions (the time period is adjustable from 1 to 10 minutes). The music source connected to the “MC1” music connector is used for the System Reminder (unless the internal music source is selected by option strap on the CPM--see Installation).

Related Features

MC1 Music Source

Related Programming

System Application - System Time, (PC-DBA: ALT-T)
System Resource - System Reminder

Operation

No user operation is required. When the programmed time interval(s) are reached, the internal music source or MC1 music source is heard over all digital extensions for the duration of the “Play Time.”

Conditions

a) A System Reminder in progress is canceled at an extension when another function is invoked.
b) The music source connected to the MC1 music input is used for the System Reminder.

c) Extensions monitoring Background Music channel MC1 will not recognize the System Reminder.

d) The music alarm will not play at an extension that is busy on a call (handset or speakerphone), or in Do Not Disturb (DND) mode.

Default Setting

No System Reminder times are set for any system Tenant Group.
Alarm Play Time is set at one (1) minute.

Programming Abstract

- Set the system time and date to the correct local time and date.
- Set the System Reminder Time(s) for the appropriate time and for each Tenant Group.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-19.
- Press [save]. The database item "ALARM PLAY" displays.
- Press [chg] (change) until the appropriate Alarm Play Time displays (in seconds.)
- Press [back] or [next] to continue programming. Or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter. The program title page displays.
- Press any key at the program title page to enter the Main Menu.
- Select PC-DBA from the Main Menu. The PC-DBA menu is then shown.
- Select Programming from the PC-DBA menu.
- Use ↓ ↑ → ← to highlight "Call Handling" and then press Enter.
- Use ↓ ↑ → ← to highlight "System Reminder, then press Enter. The cursor is now positioned on the database item - "Tenant1 - Reminder 1."
- Press Enter to allow entry into this database item.
- Enter the time for this alert interval in 24hr format. Then press Enter.
- Move the cursor to the next alert interval time (if necessary) and press Enter to input this data.
- Move the cursor to the "Play Time" data item.
- Press Enter until the appropriate play time displays.
- When you have completed all changes, press Esc (escape) to exit System Reminder programming. You will be prompted to confirm exit request; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave this data unchanged.
  - Press "**Y**" to save changes.
- You will then be prompted "File Exists, Override?"

- Press "**N**" to abort changes and leave this data unchanged.
- Press "**Y**" to save changes.

- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Alphanumeric Display (Super Twist)

The Digital Speakerphone provides a two line, sixteen column Super Twist LCD that supports thirty-two (32) alpha-numeric characters. Super Twist technology provides greatly enhanced viewing from most viewing angles and eliminates the need for contrast adjustment. The LCD is very useful for sending and receiving preprogrammed messages. Since Caller ID is a standard DX-80 feature this valuable identification feature (if subscribed from the local telephone company) will greatly enhance the way outside callers are handled. The LCD enhances many system features as well; since User and CO Line names may be programmed in the system, the display will help identify these callers. When programming is required, any Digital extension may be used for System Database Programming.

The LCD is interactive and will prompt the user with various choices concerning call set-up, handling and completion. The LCD provides help screens for feature button programming, password and security control, and status of incoming calls. All messages, call status, operation prompts and related indications will be displayed in a logical, preset order and priority.

Related Features

Extension User Name
CO Line Name Programming
Enhanced Lettering/Letter Type

Related Programming

System Resource - CO Line Name, User Names
System Application - Category 1 - Letter Type

Operation

Since the alphanumeric display enhances most feature operation, its use is discussed in the text of the related features.

Conditions

a) Display messages each have their own display priority depending on various call/feature operations.
b) The message with the highest priority will be displayed on the LCD at any time.
c) In reference to the time and date message display, the extension number or extension name will be displayed as well as the active system service mode (Day, Eve, Alt.).

Default Setting

See Extension User Name and CO Line Name.

Programming Abstract

No programming is required.

Answering Machine Emulation/Record & Pickup (via DX-80 Hard Drive {in-skin} Voice Mail)

Answering Machine Emulation requires the DX-80 Hard Drive Voice Mail (in-skin voice mail). This feature 'mimics' the call screening feature of a simple analog answering machine. Within a specified time after a call is answered by an extension user's Voice Mail Box, that user can monitor/screen callers as they leave a message.

The extension user will receive a warning tone that indicates when a caller has been answered by their voice mail box. They then have the option to monitor the caller or ignore the alert and allow the caller to leave a message. Once the user has selected to monitor the caller, they then have the option to leave the caller undisturbed (leaving a message) or to retrieve the caller from the voice mail box and be connected to the caller for a live conversation.

Related Features

Voice Mail

Related Programming

Extension - Port Type
Extension - Predefined Forward
Extension Application - Uniform Call Distribution - Hunt Group 24
Extension Application - Voice Mail Table
Call handling - Voice Mail Monitor Time
Call handling - Predefined Forward Time

Operation

1. When a caller has been answered by an extension user's voice mailbox, an alert tone is heard. The feature button programmed for Voice Mail (FEATURE 6 MNO 4 GHI) will flash green at a fast rate.
2. Press the flashing Voice Mail button. The button LED will now flash green at a slower rate.
3. The display will show:

   MONITOR VM CALL
   yes no

4. Press the left Display Interactive button [**yes**] to monitor call. The LED of the voice mail button will light steady green. At this time you are monitoring the caller and message in progress.
5. Or press the right Display Interactive button [**no**] to exit this mode and abandon monitoring.
6. If you select [**yes**], the display will show:

   MONITORING
   answer exit

7. Press the left Display Interactive button [**answer**] to be connected to the caller and remove him from the voice mailbox. The voice mail button LED will extinguish.
8. Press the right Display Interactive button [**exit**] to leave the caller in the voice mail box to record her message and return your DET to idle status.

Conditions

a) To Monitor or Answer a call, action must be taken before the "Monitor Time" expires. (Monitor Time starts at the time the caller is connected to the user's voice mail box.)
b) For Answering Machine Emulation to operate the extension must be forwarded to a DX-80 Voice Processing Module (voice mail). (Predefined Call Forward or Extension Call Forward can be used for this purpose.)

Default Setting

VM Monitor Time is set at 10 seconds. (Range is 10, 20… 60.)
Feature Key Programming – Button 12 is programmed as a Voice Mail button (F64).
Voice Mail is set to UCD Group 24 (directory number 433).

Programming Abstract

- Change Monitor Time if required.
- Program Predefined Call Forward for each extension if calls should always be directed to voice mail from that extension.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-34.
- Press [save]. This advances to the VM Monitor_T screen.
- Press [chg] (change) until the appropriate VM Monitor Time displays (in seconds.)
- Press [back] or [next] for other programming. Or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.
- Use ↓ ↑ → ← to highlight "CALL HANDLING" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 3, then press Enter. The cursor is now positioned on the database item - "Dial Delay Time."
- Use ↓ ↑ → ← to highlight "VM Monitor Time" and then press Enter until you reach the appropriate play time. (Range is 10-60 seconds.)
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Attendant Administration (Admin.) FEATURE # 0 OPER

Attendant Administration (Admin.) is used to set or modify the features; Service Mode (Day/Alt/Eve/Time), Auto Attendant Messages (optional Auto Attendant Module required), Temporary Mode, System Speed Dial and FWD AUXI LAMP. Attendant Administration (Admin.) can be performed at any user extension, but the assigned Attendant Extension user password is required.

Related Features

Service Mode
Automated Attendant
Temporary Mode
Speed Dial - System
Auxiliary Lamp - CFW
Tenant - Attendant Programming

Related Programming

System Resource - Attendant (Tenant 1-3), Alternate Attendant, System Number Assignment, Speed Number Programming, User Password
CO Line - Answering Position (Day/Evening)
System Application - Time Switching

Operation

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

Note: Before Attendant Administration (Admin.) can begin, you must enter the User Password of the programmed Attendant extension for the Tenant Group to be administered.

1. At any digital extension enter the Admin. Code FEATURE # 0 OPER.
2. Enter the Tenant Group number to be Administered. (Typically Tenant Group 1.)
3. Press [save].
4. Enter the password for this Tenant Group Attendant (default for the Tenant Group 1 Attendant is “9999”).
5. Press [show]. The first Admin. item (“SVC MODE CHANGE”) displays.

```
SVC MODE CHANGE
 back next show
```

6. Press [next] to move to the next Admin. item or press [show] to show the current service mode (DAY/ALT/EVE/TIME).

To change Service Mode:

1. Press [show]
2. Press [chg] to toggle and **set** the service mode. Options are Day, Evening, Alternate, or Time (“Time” mode follows programming of Time Switching).
3. Press the Hold button to exit Service Mode Change and return to the previous menu.
4. Press [next]. The Admin. item “AUTO_A MESSAGE” displays.

```
AUTO_A MESSAGE
 back next show
```

To change Auto Attendant Messages:

1. Press [show]
2. Press [back] or [next] to toggle the ten (10) programmable greetings and messages. These are: 1. DAY GREETING, 2. ALT GREETING, 3. EVE GREETING, 4. WAITING MSG., 5. INVALID MSG., 6. BUSY MSG., 7. NO_ANS. MSG., 8. BYE MSG., 9. INQUIRY MSG., 10. TEMP MSG.
3. Press [back] or [next] until the appropriate greeting/message displays.
4. Press [show] for selected greeting/message to record a new greeting/message, play the current greeting/message, or change the maximum record time for that greeting/message. The current record time for the selected message displays.
5. Press [chg] to set or change the record time of the greeting/message.

6. Dial 1 - 99 to set the maximum seconds allowed to record the specific greeting/message. (Keep in mind that the maximum length of auto-attendant greeting/messages is 120 seconds.)
7. Press [save]. The new maximum record time for this greeting/message is now stored.
8. Press [play] to hear the current greeting/message.
9. Press the Hold button to return to the previous Admin. level.
10. Press [record] to record this greeting/message.
11. Press [stop] to end recording.
12. Continue this process for each Automated Attendant greeting/message.
13. When finished recording greetings/messages, exit Admin. by pressing the On/Off button twice. Or return to the previous Admin. level by pressing the Hold button.
14. Press [next]. The Admin. item Temporary Mode displays.

To change Temporary Mode:

Note: Temporary Mode is available for special circumstances that may arise such as holidays and bad weather days so that callers can be informed of unusual business hours adjustments. While active, Temporary Mode "Y" plays the Temporary Greeting in place of the "DAY," "ALT" and "EVE" Greeting.

1. Press [chg]. Temporary Mode is toggled On/Off each time [chg] is pressed.
2. Press [next]. The Admin. item System Speed Number displays.

To change System Speed Numbers:

1. Press [show]
2. Dial a valid System Speed Dial directory number (500-699).
3. Press [show] to view the current System Speed Dial number. Display will read "EMPTY" if no number is currently programmed.
4. Press [chg] to change the current number.
5. Dial the telephone number to store in this speed dial directory number.
6. Press [save]
7. Press [next] or [back] to return to additional System Speed Number programming.
8. When finished making changes, exit Admin. by pressing the On/Off button twice. Or return to the previous Admin. level by pressing the Hold button.
9. Press [next]. The Admin. item "Forward Auxiliary Lamp" displays.

To enable/disable the Call Forward indication of the Auxiliary Lamp for a particular extension:

Note: Extensions that use Call Forward frequently may not wish to have their Auxiliary Lamp indicate the status of Call Forward "Active." Therefore the attendant has the ability to disable this function of the Auxiliary lamp.

1. Press [show].
2. Dial the directory number for the extension to be programmed.
3. Press [show].
4. Toggle [chg] to turn on and off the Auxiliary Lamp/Status bar functionality for Call Forward status of that extension. "**Y**" = yes, "**N**" = no.
5. Press [back] or [next] to program another extension.

6. When finished making changes, exit Admin. by pressing the On/Off button twice. Or return to the previous Admin. level by pressing the Hold button.

Conditions

Speed Dial:

a) To enter a CO Line **Flash** ("hook-flash") in a System Speed number, press FEATURE 3 DEF. A stored "hook-flash" is indicated by a "/" character. For example to enter "FLASH-1389" in a system speed number the entry would be: "FEATURE + 3 DEF + 1 3 DEF 8 TUV 9 WXYZ + [save]." The displayed system speed number would be "/1389"

b) To enter a **Pause** in a System Speed Dial, press FEATURE 7 PQRS 0 OPER. A stored pause is indicated by a "P" character. For example to enter "9pause18008778000" into a system speed number the entry would be "9 WXYZ + FEATURE + 7 PQRS 0 OPER + 1 8 TUV 0 OPER 0 OPER 8 TUV 7 PQRS 7 PQRS 8 TUV 0 OPER 0 OPER 0 OPER + [save]." The displayed system speed number would be "9P18008778000."

c) To **chain** one speed dial number to another, press FEATURE 1 + the speed dial number location to dial. For example; if a very long telephone number will not fit into one speed number location, split the number into two locations. To store the number "123-456-7890-123-456-7890-123-456-7890" into locations 500 and 501, enter into location 500: "1 2 ABC 3 DEF - 4 GHI 5 JKL 6 MNO - 7 PQRS 8 TUV 9 WXYZ 0 OPER + FEATURE + 1 + 5 JKL 0 OPER 1 + [save]" (where 5 JKL 0 OPER 1 is the second speed number location). Enter into 501: "123-456-7890-123-456-7890." To dial this number access only location "500."

Attendant

One primary attendant may be assigned in each of the DX-80 system's three (3) Tenant Groups. The standard Digital Speakerphone will serve as the attendant telephone. When assigned as attendant, this extension supports general system functions like Line Recall, Forced Incoming ICM Call Forward and manual evening or alternate service mode operation. The attendant will receive all intercom calls directed to the Attendant Directory Number, ("0" at default). The attendant extension has an internal call queue that allows multiple intercom calls to be directed to the attendant at the same time.

A second (alternate) attendant position may be designated in each tenant group for common sharing of incoming CO line calls or load sharing during peak traffic periods.

The attendant's extension password allows for control of the system service mode (Day/Evening/Alternate/Time), time of day settings, System Speed Dial number programming, and recording of the optional Auto Attendant greetings. The attendant extension may be connected to any system station port and be assigned any intercom extension number in the numbering plan.

Related Features

Do Not Disturb (i.e., forced DND)
Hotel Mode
Room Status (F7#)
Attendant Administration (F#0):
- Service Mode Change
- Auto Attendant Message Record/Review
- Temporary Service Mode
- System Speed Dial
- Call Forward Auxiliary Lamp

Extension User Password (F97)
Caller ID Table (review) (F6#)
Ring Mode (F63)

Related Programming

System Resource - Attendant, Attendant - Alternate, User Password
System Application - Operator Code

Operation

1. Any extension may dial 0 to reach the programmed system attendant extension.
2. All unanswered transferred calls will route to the attendant extension.

3. When multiple internal calls are waiting in queue for the attendant extension, the display indicates the number of waiting calls in the display (the illustration shows two calls waiting):

```
LINE 3      01:45
-->>  2
```

Conditions

a) The Extension User Password programmed for the Attendant extension is required for entry into Attendant Administration, Caller ID Table and Ring Mode. The default password is 9999.
b) Only the designated Attendant extension can manually change the system Ring Mode.
c) Only the designated Attendant extension can manually change extension Room Status (Hotel Mode).
d) The Attendant extension receives all calls via any extension that invokes Forced Intercom Call Forward.

Default Setting

Extension 101 is the system programmed Attendant.
Extension 101 User Password is 9999.

Programming Abstract

- Program the selected extension as the Attendant extension.
- Program the selected extension as the Alternate Attendant extension.
- Program Attendant extension User Password. (Note: Reference User Password for programming instructions of this feature.)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Attendant Extension

- Enter **04-02-1-01** to program the attendant extension for Tenant Group 1. (**04-02-2-01** for Tenant 2 Group, **04-02-3-01** for Tenant Group 3.)
- Press [save].
- To change the designated attendant extension press [chg] (change).
- Enter the extension number to be assigned as the Attendant Extension.

Note: Only valid extension directory numbers can be assigned as tenant group attendants. Extensions that are programmed as Attendant for another Tenant Group or Alternate Attendant cannot be programmed as the attendant.)

- Press [save].

Program Alternate Attendant Extension

- Return to the Database Item Select screen by pressing the Volume button (up or down).
- Enter **04-02-1-06** to program the attendant extension for Tenant Group 1. (**04-02-2-06** for Tenant 2 Group; **04-02-3-06** for Tenant Group 3.)
- Press [save].
- To change the designated attendant extension press [chg] (change).
- Enter the extension number to be assigned as the Attendant Extension.

Note: Only valid extension directory numbers can be assigned as tenant group attendants. Extensions that are programmed as Attendant for another Tenant Group or Alternate Attendant cannot be programmed as the attendant.)

- Press [**save**].

Program Attendant Extension User Password

- Reference "Extension User Password" for programming instructions of this feature. The default password is 9999.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then press Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select "Programming" from the PC-DBA menu.

Program Attendant Extension

- Use ↓↑→← to highlight "System Resource" and then press Enter.
- The cursor is now positioned on the database item - "Attendant."
- Press Enter. The cursor is now positioned on the database item "Attendant - Tenant 1."
- Press Enter to select this data item for change. The data item is ready for input.
- Enter the extension directory number to be assigned as the Attendant Extension.
- Press Enter continue.

Program Alternate Attendant Extension

- Use ↓↑→← to highlight Alternate Attendant database item.
- Press Enter to select this data item for change. The data item is ready for input.
- Enter the extension directory number to be assigned as the Alternate Attendant Extension.
- Press Enter.
- Use ↓↑→← to highlight the next database item to be changed and follow the conventions used in the previous steps to complete any other changes required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: changes made via PC-DBA are NOT updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming Guide section of this manual to learn more about this procedure.

Attendant / Extension DSS Console

The Attendant/Extension DSS Console is a self contained digital terminal that interacts with a predetermined digital speakerphone. The console has 60 programmable buttons that can be used for easy access to the DX-80 systems many CO lines, extensions and features. The first forty-eight buttons have dual colored LED's that allow status monitoring of system resources such as CO Lines and Extensions. The remaining twelve buttons on the Attendant/Extension Console may be used for any system feature or resource but are not equipped with LED's.

Although usually considered to be an attendant feature benefit, the DSS Console can be assigned to any DX-80 digital speakerphone. A maximum of twelve (12) sixty-button Attendant/Extension Consoles may be added to the system. Each requires its own dedicated digital port and therefore reduces the number of digital speakerphones that can be connected to the system on a one-to-one basis. Any digital extension may be assigned four Attendant/Extension DSS Consoles maximum.

Related Features

Direct Station Selection (DSS)/Busy Lamp Field (BLF)
Attendant/Extension DSS Console Button Programming
Speed Dial (System and Extension)
CO Line Assignment

Related Programming

System Resource - Attendant, DSS Allocation

Operation

The operation of each feature/directory number button will correspond with the associated feature. The DSS Console adds 60 direct feature/resource access buttons to the 30 buttons provided on the digital speakerphone.

Conditions

a) Each DSS Console has 48 dual-color LED buttons and 12 buttons without LEDs.
b) Each DSS Console required its own dedicated cable pair from the KSU.
c) 12 maximum DSS Consoles can be assigned in the DX-80 system.
d) 4 maximum DSS Consoles can be assigned to any one digital speakerphone (extension/attendant)

Default Setting

No Attendant/Extension Consoles are assigned in default.
Each DSS is "mapped" with a default button arrangement. Refer to Configuration in the Overview section of this manual to view the DSS button map.

Programming Abstract

- Assign a DSS Console to the designated digital port via directory number (extension number assigned to that digital port).
- Assign the DSS Console to operate with the designated digital speakerphone (owner).
- Program buttons on DSS Console as required if default map is not adequate for your application.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **04-14-01-01** to program the **Owner** of DSS Console #1.
- Press [save]. The current programming of the DSS Console #1 **Owner** displays.

- To change the designated DSS Console **Owner** press [**chg**] (change).
- Enter the extension number to be assigned as the DSS Console **Owner**.

Note: Only valid (equipment installed) extension directory numbers can be assigned as DSS Console Owners.

- Press [**save**].
- Press [**next**]. The current directory of the DSS Console is display ("NULL" if empty).
- Press [**chg**] to enter the new DSS Console directory number (the extension number of the digital port to which the DSS Console is connected).
- Press [**save**].
- Press [**next**]. The display prompts you for the next DSS Console # to program. Valid entries are 1-12.
- Enter the number of the next DSS Console to program or press the Hold button to return to the previous programming menu for other programming requirements. Or, press the On/Off button twice to exit programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter. The program title page displays.
- Press any key at the program title page to enter the Main Menu.
- Select PC-DBA from the Main Menu. The PC-DBA menu is then shown.
- Select Programming from the PC-DBA menu.

Program DSS Console Owner/Port:

- Use ↓↑→← to highlight "System Resource" and then press Enter.
- The cursor is now positioned on the database item - "Attendant."
- Use ↓↑→← to highlight the database item "DSS Allocation." The cursor is positioned on the database item "DSS Unit 1, DIR No."
- Press Enter to select this data item for change. The data item is ready for input.
- Input the directory number of the digital port to which the DSS Console is connected.
- Press Enter. The data is stored.
- Use ↓↑→← to highlight the DSS Unit 1, DSS Owner database item.
- Press Enter to select this data item for change. The data item is ready for input.
- Enter the extension directory number of the extension with which this DSS will operate.
- Press Enter. The data is stored.
- Use ↓↑→← to highlight the next database item to be changed and follow the conventions used in the previous steps to complete any other changes required.
- When you have completed all changes, press Esc (escape) to exit System Reminder programming. You will be prompted to confirm exit request; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave System Reminder unchanged.
  - Press "**Y**" to save changes.

- You will then be prompted “File Exists, Override?”
  - Press “**N**” to abort changes and leave System Reminder unchanged.
  - Press “**Y**” to save changes.
- Continue making other programming changes or exit PC-DBA programming.

Program Attendant Extension User Password:

- The default password is 9999. Reference “Extension User Password” for programming instructions of this feature.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Attendant / Extension DSS Console Button Programming

FEATURE # 4 GHI

The Attendant/Extension DSS Console has 60 buttons that may be programmed for any of the available DX-80 system directory numbers. Forty-eight of the sixty buttons have dual colored LED’s and are user and/or system programmable for any system directory number; System Speed Dial, CO Lines and DSS/BLF extensions. The remaining twelve buttons on the Attendant/Extension DSS Console are not equipped with an LED and are better suited for directory numbers of features that don’t require status indication (like Background Music).

Related Features

Attendant / Extension DSS Console

Related Programming

None

Operation

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

1. Press FEATURE # 4 GHI.
2. Press the programmable feature button on the console you wish to view or change.
3. Press [show] to view more details.

   Or…

4. [chg] to change the directory number for the selected button.
5. Input the valid Directory Number for the selected function.
6. Press [save] to store the change.
7. Press a different button to make additional changes or exit button programming by toggling the On/Off button, or by going off hook and back on hook with the handset.

Conditions

a) Only directory numbers can be programmed on DSS Console buttons.
b) The Attendant/Extension DSS Console must be assigned to operate with your extension in order to program buttons.

Default Setting

The button map of each DSS Console is defaulted for extensions 101-148, Auto Dial (System Speed Dial) 500-507, All Page, Page Zones 1 and 2, External Page, Music Channels 1 and 2, and Pick Up Groups 1 and 2.

Programming Abstract

- The DSS buttons cannot be programmed from Database Administration via the digital speakerphone.
- Via PC-DBA, the DSS buttons may be programmed for directory numbers.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.
- Use ↓ ↑ → ← to highlight “Feature Key Programming” and then press Enter.
- The cursor is now positioned on the database item - “EXT’s Feature Key.”
- Use ↓ ↑ → ← to highlight “DSS Set” database item.
- Press Enter. The DSS Console number (1-12) must now be input. (If this information is not known, use the Attendant/Extension DSS Console programming to determine the DSS Unit #.)
- Press Enter to select this DSS unit feature button programming. The cursor is now positioned on the first button (upper left corner of the DSS unit).
- Use ↓ ↑ → ← to highlight the appropriate button for programming.
- Press Enter. The cursor is now positioned on “NULL.”
- Press Enter to select NULL. This effectively deactivates this button. Or...
- Use ↓ ↑ → ← to highlight DIR No. and press Enter. You are now required to enter the directory number to store on this button.
- Enter the directory number (e.g., ”150” for extension 150, or “400” for All Page)
- Press Enter. This data is now stored. Move the cursor to the next button to be programmed using the same sequence to program any button of the DSS Console.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: changes made via PC-DBA are NOT updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming Guide section of this manual to learn more about this procedure.

Automated Attendant (optional)

The DX-80 Auto Attendant option can greatly enhance business office productivity by providing either a full-duty automated attendant to handle all incoming system calls or a part-duty automated attendant to handle overflow traffic only when the primary attendant cannot handle calls or after hours when the position may not be staffed.

The optional Automated Attendant Module (AAM) may be added to the DX-80 System. The AAM is installed inside of KSU1 and provides a maximum of 120 seconds of programmable voice announcements. The AAM provides four *ports* to handle four (4) simultaneous callers. These voice announcements include: Day, Evening, Noon and Temporary greeting messages; Waiting, Invalid, Busy, No Answer, Good-Bye and Inquiry prompts/instructions. The maximum recording time for each greeting/message and the actual recording for each voice announcement is setup via Attendant Administration.

Related Features

Attendant Administration

DISA (Direct Inward System Access)

Related Programming

Call Handling - Auto Attendant (Category 1, 2 and 3)

System Application - Time Switching

Operation – Setting up the Auto-Attendant Greetings and Messages

Proper setup of the automated attendant will require some planning prior to entering the setup session. Adequate planning of announcements and the required results are essential to deploying a successful automated attendant operation. Consider the ten (10) messages/greetings and any specific telephone system dialing operations that have been established for your DX-80 application.

Consider the following:

- What are the extension numbers that should be listed in the greeting, if any?
- Should any UCD Group directory numbers be announced? (For example, dial 410 for Sales.)
- Will you be using the “Inquiry” message? (The Inquiry “*” may be dialed during the DAY, ALT, or EVE Greeting to provide a recorded announcement to the caller – for example, directions to the office: “To get recorded directions to our office, dial *. Otherwise, stay on the line and we’ll be with you soon.”)
- Do you want to advise callers of the “Waiting Code”? (The Waiting Code, “#” may be dialed when the called party’s extension is busy. When the caller hears the “BUSY MSG” she may dial the Waiting Code to wait 10 seconds. When ten seconds have expired the DX-80 system will automatically try the extension again.)
- Prepare a written announcement for each message/greeting.

Messages/Greetings are as follows:

DAY GREETING - This is the greeting the callers hear when they are answered while the system is in “DAY” mode of operation. (For example, “Hello, this is xyz company. If you know your party’s extension number, dial it now. Dial ‘0’ for the system attendant. For sales, dial ‘410.’ To get recorded directions to our office, dial ‘*’. Otherwise stay on the line, we will be with you shortly.”)

ALT GREETING - This is the greeting that callers hear when they are answered while the system is in “ALTernate” mode of operation.

EVE GREETING - This is the greeting that callers hear when they are answered while the system is in EVEning mode of operation. (For example, “Hello, this is xyz company. You have reached us after our regular business hours. If you know your party’s extension number, dial it now. To get recorded directions to our office, dial ‘*’. Thank you for calling.”)

WAITING MSG. - This is the message that callers hear after their call has been processed. (E.g., “Your call is being transferred.”)

INVALID MSG. - This is the message that callers hear when they have dialed a number that is not defined in the DX-80 system directory. (E.g., “We’re sorry that is not a valid extension on our system.”)

BUSY MSG. - This is the message that callers hear when they have dialed an extension number that is busy. (E.g., “We’re sorry, that extension is currently busy. To wait for this extension, dial “#” or dial another extension now.”)

NO_ANS MSG. - This is the message that callers hear when the extension they entered does not answer the call. Another extension request may be made at this time. (E.g., "Your party does not answer, please enter another extension number or dial 0 for the system attendant.")

BYE MSG. - This is the message that callers hear when the DX-80 system is about to disconnect them. This occurs when the caller dials nothing after a Busy Message or No Answer Message has been played.

INQUIRY MSG. - This is a special message that can provide callers with information without ever having to be handled by a live person. (E.g., directions to the office... "From SR101, take the Via deVentura exit - West, 2 blocks to Hayden - North to 14645 N. Hayden Road")

TEMP MSG. - This is a message that can be used to announce periodic planned or planned events. (E.g., "Our offices are closed in observance of the holiday.")

Setup:

- Enter Attendant Administration from any digital speakerphone.
  - Press FEATURE # 0 OPER.
  - Enter the Tenant Group (1,2, or 3) for which settings will be made.
  - Press [save].
  - Enter the Attendant Password for the selected Tenant Group. The default password is 9999.
  - Press [show]. The display shows "SVC MODE CHANGE."
- Press [next]. The display shows "AUTO_A MESSAGE."
- Press [show]. The display shows "1.DAY GREETING." This is the greeting that callers will hear when they are answered by the DX-80 Automated Attendant and the system is in the "DAY" mode of operation. (Notice that the button LED is lit during the Automated Attendant setup session. This indicates that the speakerphone microphone will be active during the record portions of setup. Alternatively, the handset may be used for recording.)
- To record this greeting, press [show]. The display will show "RECORD TIME :xx" (where "xx" is the current time allotted to this message).
  - To change the total length allotted to this message, press [chg].
    - Enter the new time in seconds (00-99) then press [save].
  - Press [play] to hear the current contents of this greeting/message.
    The display shows "AUTO_ATT NO. :1" indicating that you will hear the recorded greeting for the first *port*. (Keep in mind there are four ports. Each recorded simultaneously during the "record" operation. You may use the [chg] function to playback each individual *port* to test each for proper operation.
  - Press [record] to begin recording this greeting. Once [record] has been pressed, the record operation is immediately begun. (Note: The length of the message/greeting to be recorded cannot exceed the allotted time length for this greeting/message.)
    - Press [stop] to end the recording of this message. (Note: If the Record Time is exceeded, the record operation will end automatically.)
  - Press the Hold button to return to the previous level of setup. ("1.DAY GREETING")
- To skip to the next greeting/message, press [next]. The display will show "2.ALT GREETING"
- Use the conventions described for "1.DAY GREETING" to playback and record all greeting/messages.
- When finished with setup of the automated attendant, press or hang up the handset to end the setup session.

Conditions

a) Automatic CO Line Ringing time settings must be programmed in Time Switching and completely set for a seven (7) day week for Automatic CO Line Ringing Modes to properly follow a automatic switching schedule.

b) The optional AAM must be installed for automated attendant to function.

Default Setting

No CO Lines are set for automated attendant operation.
The Answer Position is set to Extension "101" for DAY, ALT and EVE modes.
Ring Time to Answer is set at "0" seconds.
No Answer Time is set at "20" seconds.
Drop No digits Dialed is set to "No."
XFR Mode set to RBT (Ring Back Tone).
Waiting Code set to "#."
Inquiry Code set to "*."
DISA Code set to "9."

Programming Abstract

- Set the system time and date to the correct local time and date (for Time mode operation).
- Program the CO lines to be answered by the automated attendant and for the service modes that they should be answered.
- Program the various timers and settings. (See default list.)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **03-43** to program the Automated Attendant.
- Press [save].
- Press [show]. The first Auto Attendant database item (Ring Time To Answer) displays.
- To change the **Ring Time To Answer** press [chg] (change). This timer sets the amount of time that a caller will hear ring-back before the line is answered by the auto attendant.
  - Enter the new answer delay time from 0-20 seconds, then press [save].
- Press [next]. The next database item (Ring No Answer) displays.
- To change the **Ring No Answer** timer press [chg] (change). This timer sets the amount of time that a call rings the auto attendant before being routed to the designated Answer Position in the event that all auto attendant ports are in use and unavailable to handle the call. Each time the [chg] button is pressed the value is updated to the next valid time interval. Valid times are 10-90 seconds in 10 second increments.
- Press [next]. The next database item (Drop No Extension # Dialed) displays.
- To change the **Drop No Extension # dialed** operation press [chg] (change). Each time that the [chg] button is pressed the value changes (Y/N). When set to "Y" (yes), the caller will be automatically dropped by the system if they do not make a selection or dial a valid extension directory number. When set to "N" (no), if a caller does nothing he is routed to the designated Answering Position.
- Press [next]. The next database item ("XFR" {Transfer} Mode) displays.
- To change the **XFR Mode** press [chg] (change). Each time that the [chg] button is pressed the value changes between the two available settings (Ring-Back Tone and Music On Hold), (RBT/MOH). This is the *call processing* that is provided to the caller after they have made a selection and are being routed in the system.
- Press [next]. The next database item (Waiting Code) displays.
- To change the **Waiting Code** press [chg] (change). The Waiting Code is assigned to provide a caller the option to wait for a busy extension and try that extension again after 10 seconds. The code may be any dial

pad single-digit from 0-9, *, or #. (Note: The system will not allow any digit to be assigned to more than one function. Therefore the Inquiry Code and DISA Codes must be considered when changing the Waiting Code.)

- Enter the new Waiting Code digit and press [save] to store.

- Press [next]. The next database item (Inquiry Code) displays.
- To change the **Inquiry Code** press [chg] (change). The Inquiry Code is assigned to provide a caller the option to hear a general announcement (company hours, directions to the office, etc.). The code may be any dial pad single-digit from 0-9, *, or #. (Note: The system will not allow any digit to be assigned to more than one function. Therefore the Waiting Code and DISA Codes must be considered when changing the Inquiry Code.)
  - Enter the new Inquiry Code digit and press [save] to store.
- Press [next]. The next database item (DISA Code) displays.
- To change the **DISA Code** press [chg] (change). The DISA Code is assigned to provide a caller access to any DX-80 system resource (e.g., extensions, CO lines, etc.). The code may be any dial pad single-digit from 0-9, *, or #. (Note: The system will not allow any digit to be assigned to more than one function. Therefore the Waiting Code and Inquiry Codes must be considered when changing the DISA Code.)
  - Enter the new DISA Code digit and press [save] to store.
- Press [next]. The next database item (Answer Position) displays.
- To change the **Answer Position** press [show]. Since Answering Positions may be assigned as unique destinations per Tenant Group, the system requires this input now.
  - Enter the tenant group for which programming changes are to be made (1-3) (usually “1”) then press [show]. The current Day Mode - Answer Position for the selected tenant group displays.
  - Press [chg] (change) to enter a new destination for the Day Mode for this tenant group.
  - Enter the appropriate DX-80 system directory number (extension, UCD group, Virtual Number) where callers should be routed when they cannot be routed automatically.
  - Press [save].
  - Press [next]. The current ALT (Alternate) Mode - Answer Position for the selected tenant group displays.
  - Press [chg] (change) to enter a new destination for the ALT Mode for this tenant group.
  - Enter the appropriate DX-80 system directory number (extension, UCD group, Virtual Number) where callers should be routed when they cannot be routed automatically.
  - Press [save].
  - Press [next]. The current EVE (Evening) Mode - Answer Position for the selected tenant group displays.
  - Press [chg] (change) to enter a new destination for the EVE Mode for this tenant group.
  - Enter the appropriate DX-80 system directory number (extension, UCD group, Virtual Number) where callers should be routed when they cannot be routed automatically.
  - Press [save].
  - Press [next]. The DX-80 system prompts for changes to another tenant group if necessary. If so, enter that group number and follow the previous steps to complete programming for the selected tenant group. Otherwise press to return to the previous programming level (Answer Position).
- Press [next]. The next database item (**Auto Attendant Line**) displays. Notice that the display prompts you for the CO line directory number (740-755).
- Enter the CO line directory number (740-755) to be programmed for use with the automated attendant.
- Press [show]. The next database item for Automated Attendant operation of this CO line (Auto_A Line) displays.

- Press [**chg**] (change) to change this value. Each time the [**chg**] button is pressed the value changes from Y/N. ("Y," yes indicates that this CO line will be answered by the automated attendant. "N," no indicates that it will not.)
- Press [**next**]. The next database item (Service) and the current setting displays.
- Press [**chg**] (change) to select the appropriate operation mode for automated attendant for this CO line. (Available options are: ALWAYS, NEVER, DAY, and EVE.)
- Press [**next**]. The system prompts for the next CO line to be programmed automated attendant answering. You may continue programming other CO lines for automated attendant use or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter. The program title page displays.
- Press any key at the program title page to enter the Main Menu.
- Select PC-DBA from the Main Menu. The PC-DBA menu is then shown.
- Select Programming from the PC-DBA menu.
- Use ↓↑→← to highlight "Call Handling" and then press Enter.
- The cursor is now positioned on the database item - "Call Handling - Category 1."
- Use ↓↑→← to highlight Automated Attendant then press Enter. The cursor is now positioned on the database item "AAT - Category 1."
- Press Enter to select this Category or move the cursor to the appropriate data Category for changes to be made.
- Press Enter to select the specific data item to be changed. The following data items have fixed values that are scrolled each time the Enter button is pressed:
  - Category 1: No Answer Time, Drop No Dial, XFR Mode
  - Category 2: Auto Attendant Line, Service
- All other Automated Attendant database items require input from the keyboard. When the Enter button is pressed, the data item value is removed and is ready for the new value to be entered. When the necessary (and valid) data is input, press Enter.
- Continue programming all those database items where changes are required.
- When you have completed all changes, press Esc (escape) to exit System Reminder programming. You will be prompted to confirm exit request; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave System Reminder unchanged.
  - Press "**Y**" to save changes.
- You will then be prompted "File Exists, Override?"
  - Press "**N**" to abort changes and leave System Reminder unchanged.
  - Press "**Y**" to save changes.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Automatic CO Line Ringing Modes

The system can be programmed to follow a seven day twenty-four hour time schedule that will automatically switch incoming CO lines to their programmed Day, Evening or Alternate ringing status and destinations. The programmed timed switching of ringing modes is flexible and can be broken down into individual tenant groups. For manual changing of ringing modes (Day, Evening, Alternate), see CO Line Ringing Modes (Feature 63) or Attendant Administration.

Related Features

CO Line Ringing Modes
Attendant Administration
Night Service Mode
Night Service Activate
CO Line Ring Type Assignment

Related Programming

CO Line - Answering Position
Call Handling - Auto Attendant (Alternate Mode)
System Application - Time Switching

Operation

Once programmed the function of Automatic CO Line Ringing Modes needs no user intervention. The current mode of operation will be displayed for easy identification and verification. Service Modes are displayed as follows:

Day Mode Display:

```
JUN 22 THU  5:13
EXT         105
```

Alternate Mode Display:

```
JUN 22 THU  5:13
EXT    ALT  105
```

Evening Mode Display:

```
JUN 22 THU  5:13
EXT    EVE  105
```

Conditions

a) Automatic CO Line Ringing time settings must be programmed in Time Switching and set for seven day a week
b) The system Ringing Mode must be set to Time Mode for Automatic CO Line Ringing.
c) When programming Time – Service Mode switching, the input time represents the time of day that the service mode will change to the associated Service Mode.

Default Setting

The system is set to Day Mode Operation.

The Time Switching programming is set to operate (when “Time” mode selected) in Day Mode from 8am to 5pm, Monday through Friday; Alternate Mode from 12noon to 1pm, Monday through Friday; and Evening Mode at all other times.

Programming Abstract

- Set the Time and Date to the correct local time and date. (See System Time and Date.)
- Set the system in “Time” mode. (See Attendant Administration.)

- Program the various CO lines to ring at the appropriate Answering Positions in either Day Mode, Evening Mode or both. (See CO Line Ring Assignment.)
- Record the Auto Attendant (AAM only) for Alternate Mode Message is required. (See Automated Attendant.)
- Program Time Switching times as appropriate. (See below.)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Enter **08-15-1-02** to program Auto CO Line Ringing Modes - Time Switching for Tenant Group 1. (08-15-2-02 for Tenant Group 2, 08-15-3-02 for Tenant Group 3)
- Press [save]. The first day of the week (Sunday) displays.
- If changes are necessary for this day press [show]; otherwise, press [next] until the day of the week for which changes must be made displays. Then press [show].
- The first time period for which the Service Mode may switch displays for the day selected; "ALT START" (Alternate Start Time).
- Press [chg] to change this data.

Or…

- Press [next] to select the Service Mode for which a time schedule must be entered. (The data items that can be changed are ALT START, ALT END, EVE START, EVE END.)
- When the Service Mode to be changed displays press [chg] and input the new value in 24-hour format (e.g., 1:00 PM is entered as 13:00).
- Press [save] to store this data.

Or…

- Enter **08-15-1-02-01** to program ALT START.
- Enter **08-15-1-02-02** to program ALT END.
- Enter **08-15-1-02-03** to program EVE START.
- Enter **08-15-1-02-04** to program EVE END.
- Continue programming as required.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Application" and then press Enter.
- Use ↓ ↑ → ← to highlight "Time Switching" and then press Enter.

- Use ↓ ↑ → ← to highlight Service Mode for which a time must be input. This screen is read as “FROM’ and “TO” for each day of the week and for the switch modes Alternate and Evening. (It is also split into the three groups for each of the Tenant Groups.)
- Press Enter.
- Input the time when this service mode should become active in the left column and when it should stop being active in the right column. When the time has been input, press Enter to store.
- When you have completed all changes, press the Esc (escape) key to exit this database-programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Automatic Hold

FEATURE 9 WXYZ 4 GHI

You may enable this feature on your telephone to simplify call handling and avoid accidental “lost” calls. Automatic Hold will automatically place any call that is currently connected at your telephone on hold whenever a CO line button is pressed. For instance, if you are currently on a call on line 1 and you press line 2, the call on line 1 will be placed on Exclusive Hold automatically. Similarly, if you are currently on an intercom call and talking with another DX-80 extension then press a CO line button, the intercom call will be placed on Exclusive Hold. The need to press Hold is eliminated, unless you want to place a call on System Hold.

Related Features

CO Line Group

Exclusive Hold

Related Programming

Call Handling - Hold Reminder, Hold Recall

Operation – Setup

1. Press FEATURE 9 WXYZ 4 GHI.
2. You hear the confirmation tone and the condition is set. The display shows:

   AUTO HOLD ALLOW

3. The extension is returned to an idle state.

Operation – Auto Hold (enabled)

1. While connected to a call (intercom or CO Line). Press another CO Line button.
2. The current connection is placed on hold and then next connection is established.

Operation – Cancel

1. Press FEATURE *TONE 9WXYZ 4GHI.
2. You hear the confirmation tone and the condition is reset. The display shows:

   AUTO HOLD DENY

3. The extension is returned to an idle state.

Conditions

a) The Feature Code (FEATURE 9WXYZ 4GHI) may be programmed under a flexible button on a Digital Speakerphone. To enable/disable the feature, press the flexible button.
b) If you access an idle line and skip to another line before dialing, the first line will not be automatically placed on Hold. (A line must be connected with an active call; either you dialed a number or answered a ringing line.)
c) The Automatic Hold feature places a call on Exclusive Hold.
d) If you have the Automatic Hold feature programmed on a feature button, the feature button lamp will light when the feature is enabled.

Default Setting

Auto Hold Disabled

Automatic Record (via DX-80 Hard Drive Voice Mail) FEATURE 6MNO 7PQRS

The system permits eight extensions to have the Automatic Recording capability. When this feature is enabled for an extension, the system will record all conversations at that extension automatically whenever the user is on an internal/external call. The record will be deleted automatically after the call is released or placed on hold unless the user presses Voice Recorder button (FEATURE 6MNO 7PQRS) to save the recorded conversation before ending or holding the call. When saved, the conversation is stored in the extension user's mailbox.

Related Features

Voice Mail - Digital Integration

Related Programming

Extension Application - Voice Mail Table, Record Digit, and Automatic Record Member
Call Handling - Voice Mail Dialing Ratio

Operation

Note: The extension(s) assigned for Automatic Record must have a Voice Record button programmed. (See Flexible Feature Button Programming and Voice Record FEATURE 6MNO 7PQRS).

1. Whenever the Automatic Record Member digital speakerphone is engaged in a call, the Auto Record function is initiated.
2. Prior to recording the conversation, the connection to the voice mail box must be set up. During this setup time, the display will show "RECORDER SETUP" and the Voice Record button will be lit steady red.
3. When the connection to the voice mail box is established, the display reads "RECORDING" and the Voice Record button LED is lit steady green.

Important: If the extension user wishes to retain the recorded conversation, he must press the Voice Record programmed feature button prior to completing the call (hanging up).

Conditions

a) The Feature Code FEATURE 6MNO 7PQRS must be programmed under a flexible feature button on the digital speakerphone to be used with the Auto Record feature.

b) Outgoing call recording begins after the Call Duration Timer has expired.

c) Placing a call on hold constitutes completing a call and ends the recording function. If the recorded conversation prior to pressing hold is to be kept, the Voice Record button must be pressed prior to pressing Hold.

d) Auto Record and Voice Record occupy one voice channel on the DX-80 Voice Mail system during the record operation. This resource consuming function should be deployed with careful consideration of the total available voice mail channels and the overall impact on other voice mail/auto attendant related functions.

e) Only eight (8) digital speakerphones may be assigned for use with the Auto Record feature.

Default Setting

Auto Record is disabled at default for all extensions.

Programming Abstract

- Program the extension(s) to be used with Automatic Record for Record Allow.
- Program the extension(s) to be used with Automatic Record as Auto Record Member(s).

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **01-101~156-20 (101~156 = extension)** to program Record Allow for the selected extension.
- Press [save]. The display will show the current setting for Record Allow for this extension.
- Press [chg] (change) to select Y/N (yes/no). Yes will set this extension as a Record Allow extension.
- Press the Volume button (up or down) to return the index entry to program another extension **01-101~156-20** or...
- Exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter. The program title page displays.
- Press any key at the program title page to enter the Main Menu.
- Select PC-DBA from the Main Menu. The PC-DBA menu is then shown.
- Select Programming from the PC-DBA menu.

  Program the extension(s) for Record Allow:
- Use ↓ ↑ → ← to highlight "Extension" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 3" and then press Enter.
- Use the Page Up Page Down (Page Up/Page Down) buttons on the PC keyboard until the extension number you wish to program can be seen under the "DIR#" column.
- Use ↓ ↑ → ← to highlight the "Y/N" database item under the Record Allow column for the extension to be programmed. (As you move the cursor it can be positioned horizontally in association with the extension number under the vertical "Record Allow" column.
- Press Enter to change the value of the database item (Y/N).
- Continue programming all those database items where changes are required.

- When you have completed all changes, press Esc (escape) to exit this programming. You will be prompted to confirm exit request; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave System Reminder unchanged.
  - Press "**Y**" to save changes.
- You will then be prompted "File Exists, Override?"
  - Press "**N**" to abort changes and leave System Reminder unchanged.
  - Press "**Y**" to save changes.
- Press Esc (escape) again to return to the "Database Programming" menu.
- Use ↓↑→← to highlight "Extension Application" and then press Enter.
- Use ↓↑→← to highlight "Auto Recording Member" and then press Enter. The cursor is now positioned on the first database item, "Mem1" (Member 1).
- Press Enter to change or enter data for this database item. (If an extension number is already programmed into this position it will be displayed here. If not the data will show "NULL.")
- Using the numeral keys of the keyboard, enter the extension (directory) number to be programmed for the selected member, then press Enter.
- Continue programming other Auto Record Member as required.
- When you have completed all changes, press Esc (escape) to exit System Reminder programming. You will be prompted to confirm exit request; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave this data unchanged.
  - Press "**Y**" to save changes.
- You will then be prompted "File Exists, Override?"
  - Press "**N**" to abort changes and leave this data unchanged.
  - Press "**Y**" to save changes.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Automatic Redial

FEATURE 7 PQRS 8 TUV

Automatic Redial (AR) may be used to dial the last number dialed. The system will automatically dial the number and then wait for a predetermined time period. Following this predetermined time period if no action is taken the system will then hang up and the redial cycle will continue until the number of attempts designated in programming is reached.

Related Features

Voice Mail - Digital Integration

Related Programming

Extension Application - Voice Mail Table, Record Digit, and Automatic Record Member
Call Handling - Voice Mail Dialing Ratio

Operation

1. After a CO line call has been made and the distance party is busy, hang up.
2. Press FEATURE 7 PQRS 8 TUV. The extension will access a CO Line or CO Line group and dial the last number dialed.
3. The display will show the current attempt cycle and the total number of attempts for which the system has been programmed.

Conditions

a) The Feature Code FEATURE 7 PQRS 8 TUV can be programmed under a flexible feature button on the digital speakerphone to be used with the Auto Redial feature.

b) If a Flexible Feature button has been programmed for use with Automatic Redial, the button may be used to invoke the feature. While the feature is active the LED of that button will be lit steady red. During dialing attempts the LED of that button will flash red.

The system will continue redial attempts until:

- Call rings through and caller picks up,

Or...

- The maximum number of attempts is reached,

Or...

Any other feature is used on the telephone.

The number of redial attempts and the timed interval between attempts are set in system programming and are not changeable at the extension level.

If all extension accessible CO Lines or the CO Line group are busy at the time of an Automatic Redial attempt, that attempt will count as a valid attempt and reduce the remaining number of attempts.

Default Setting

Attempts is set at 8 seconds
Interval is set at 60 seconds
Waiting Time is set at 15 seconds

Programming Abstract

Adjust timers as required.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-31 to program Auto Redial.
- Press [save]. This advances to the Call Handling – Automatic Redial database item.
- Press [show] to enter into these data items.
- Use the [back] and [next] interactive buttons to select the appropriate data item to be changed. Available data items in Auto Redial are: "Attempts," "Interval," and "Waiting Time."
- When the appropriate data item for change displays press [chg].
  - "Attempts" will allow any number to be entered from 0-2. (Note: "0" disables Auto Redial.)
    - ➢ When the number has been entered, press [save]
  - "Interval" may be selected from the following choices: 30, 60, 90, 120. Each time that [chg] is pressed the selection is incremented through the available choices.

- "Waiting Time" may be selected from the following choices: 10, 15, 20, 25, 30. Each time that [**chg**] is pressed the selection is incremented through the available choices.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter. The program title page displays.
- Press any key at the program title page to enter the Main Menu.
- Select PC-DBA from the Main Menu. The PC-DBA menu is then shown.
- Select Programming from the PC-DBA menu.
- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight "Category 2." Then press Enter.
- Use ↓↑→← to highlight one of the three Automatic Redial data items and press Enter.
  - "Attempts" requires input from the keyboard. Once you press Enter, you must input the appropriate value from 0-2. (Note: "0" disables Auto Redial.) After the data has been input, Enter must be pressed again to store the new data move on to the next database item.
  - "Interval" can be set to one of the available choices, which are selected in sequence with each press of the Enter key.
  - "Waiting Time" can be set to one of the available choices, which are selected in sequence with each press of the Enter key.
- Continue programming other database items as required.
- When you have completed all changes, press Esc (escape) to exit System Reminder programming. You will be prompted to confirm exit request; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave System Reminder unchanged.
  - Press "**Y**" to save changes.
- You will then be prompted "File Exists, Override?"
  - Press "**N**" to abort changes and leave System Reminder unchanged.
  - Press "**Y**" to save changes.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Automatic Selection (CO/Intercom)

FEATURE 9WXYZ 5JKL

This feature allows you to access a specific outside line or intercom (ICM) automatically when you lift the handset or press the On/Off speakerphone button on a Digital Extension.

A line will not be accessed automatically when your telephone is receiving an incoming call (outside or intercom) or a line is recalling at your telephone. However, you may override this incoming call priority operation by pre-selecting an outgoing line before lifting the handset.

Related Features

Private Line
Ringing Line Priority
CO Line Group

Related Programming

Extension - Line Assignment
CO Line - Tenant Group, CO Line Group
System Application - Numbering Plan 1 - CO Group, Numbering Plan 4 - CO Line Directory No.

Operation

Note: [icm], [co], [co gp], [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

Setup

1. Press FEATURE 9WXYZ 5JKL. The display will show the current selection. ("ICM" = Intercom).
2. Press [icm] to select Intercom dial tone as the appropriate operation when the handset is lifted.
3. Press [co] to select a specific CO Line number to access when the handset is lifted. The system will prompt you for the CO line directory number to select.
4. Input the valid CO line Directory Number (e.g., 740 for CO Line 1, 755 for CO line 16).
5. Press [save].
6. Press [co gp] to select a specific CO line group number to access when the handset is lifted. The system will prompt you for the CO Line Group directory number to select.
7. Input the valid CO Line Group Directory Number (e.g., 9 for CO Line Group 1, 800 for CO Line Group 2, 806 for CO Line Group 8).
8. Press [save].
9. You hear the confirmation tone when the selection is made after [save] is pressed.

Operation

Lift the handset to access the selection.

Conditions

a) The system will not allow invalid directory numbers to be programmed during setup.
b) When a CO Line or CO Line Group is programmed for Automatic Selection that CO line or group must be programmed as available for access by the extension in the system programming.
c) The feature code (FEATURE 9WXYZ 5JKL) may be programmed under a flexible button on a Digital Speakerphone.

Default Setting

Default Setting: ICM

Programming Abstract

- Program CO Line Group directory numbers as necessary.
- Program CO Line directory numbers as necessary.
- No specific programming is required to set up or operate Automatic Selection.

Auxiliary Lamp / LED Status Bar

Each Digital Speakerphone is equipped with a dual colored LED Auxiliary Lamp/LED Status Bar to assist users in recognizing the extensions' status. The LED will operate and indicate active CO line ringing, Intercom ringing, Mute, Message Waiting, Speakerphone/Headset Mode and Call Forward conditions.

Operation

The Auxiliary Lamp/LED Status Bar will operate and give visual indications as follows:

Flash Rate	Priority	Red Lamp	Green Lamp
Fast	1	Incoming CO Line Ringing	Incoming Intercom Ringing
Slow	2	Mute	Message Waiting
Steady	3	Speakerphone/Headset in use	Call Forward

Conditions

a) The lamp may have more than one indication flashing or steady at one time as features are utilized in the system. Both colors of LED (green and red) may be lit at the same time to indicate more than one feature or function is active.

b) The Call Forward, steady green indication may be turned off via Attendant Administration programming. This is helpful if a permanent call forward option such as Voice Mail forwarding is required at an extension and the user chooses not to have a the lamp constantly lit.

Default Setting

All LED indications active.

Programming Abstract

No database programming is required.

Call Forward Lamp indication may be eliminated via Attendant Administration if necessary.

Background Music (BGM)

The DX-80 system has two (2) standard external music source inputs for Music On Hold and Background Music. When a Digital telephone is idle and this feature is activated, you can monitor background music (BGM) through the telephone speaker. You can use the feature code or press the programmed feature button to select BGM Channel 1 (771), BGM Channel 2 (772).

This is a standard feature of the system, no additional equipment is required other than your choice of Music sources.

Related Features

Music on Hold

Alarm Clock - System

Related Programming

System Application – Music Source Length

System Application – Music Source Leading 1, 2 and 3

Conditions

a) One feature button is already setup for BGM operation at the factory.

b) The feature button LED will not light when BGM is activated.

c) BGM automatically turns off when you receive or make a call.

d) BGM turns on again when the telephone return to idle status.

Default Settings

System Application – Music Source Length set at “3.” (Range is 1-4.)

System Application – Music Source Leading 1 set at “771.” (Range is any available digits.)

System Application – Music Source Leading 2 set at “772.” (Range is any available digits.)

Programming Abstract

Make changes as required to music channel numbering. See Flexible Number Plan for information on specific programming details.

Barge-In (Intrusion)

See Intrusion – Extension

Battery Back-Up (Memory)

The DX-80 system is equipped with a Lithium Ion battery for maintaining volatile system database programming and extension programming during commercial AC power interruption. The memory back-up will maintain the database programming, time and date displays, personal speed dial numbers, feature button programming, etc., for up to seven (120) days of continuous AC power loss. When system AC power is restored, the system will resume normal operation.

During AC power interruption, the system will not operate unless System Battery Back-Up via a UPS is equipped.

When the “Cold Start/Normal” option strap on the CPM Module is operated to the “Cold Start” position, with the KSU AC power turned off, the memory back-up battery is removed from the volatile memory circuit. This option strap condition is used only to initialize the system database and restore all programmable data to the factory configured default program.

New DX-80 systems are shipped with the “Cold Start/Normal” option strap in the “Cold Start” position. When a new DX-80 system is received this strap MUST be moved to the “Normal” position to allow system operation.

Note: We recommend that the system power be restored in a timely manner since the Lithium Ion battery is not recharged. Continued discharging of the Lithium Ion battery will render the battery inoperable for the intended purpose. Considering normal system use and periodic loss of commercial AC power, the Lithium Ion battery life expectancy is 5 years. When necessary, replace with a like battery.

Battery Back-Up (System)

An external UPS (Uninterruptible Power Supply) (Optional) may be installed to connect between the KSU and a dedicated 110VAC outlet. The approximate time, in back-up hours, will be determined by size (amp/hour rating) of UPS installed. In the event of a commercial power outage, the UPS will provide the necessary system voltage to allow full system operation until AC power is restored or the UPS battery voltage reaches minimum voltage thresholds and is automatically disconnected to avoid battery damage.

The UPS system battery operation time is dependent on several factors:

- Number of Digital key telephones installed
- System traffic load
- Age of external batteries
- Equipment Room Temperature
- UPS Amp/hour rating
- Recovery time since last AC power interruption

For further information, see Specifications and Installation sections for more details about how to calculate the power consumption of your DX-80 system application and apply this to the UPS requirement.

Busy Lamp Field – DSS

Depending on user requirements, any Programmable Feature Button can be programmed as a BLF button to monitor an extension’s status. When an extension is off hook the programmed BLF button LED for that extension lights red. When that extension is in Do-Not-Disturb, the LED will flash red. This same button is used as a one-button Direct Station Selection (DSS) call button for quick transfer of calls or intercom calling.

Related Features

Direct Station Selection Console
Flexible Feature Button Programming
Do Not Disturb
Transfer and Answer Call

Related Programming

PC-DBA – Feature Key Programming – Extension Feature Keys
PC-DBA – Feature Key Programming – DSS Console Feature Keys
System Application - Feature Key Copy

Setup

Note: [chg], [bksp], [save], [next], and [dir] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Press FEATURE # 3 DEF.
- Press the feature button that is to be programmed. The current function displays.
- Press [chg] to change the function.
- Select [dir] via the LCD interactive button.
- Input the directory number of the extension that is to be programmed on this feature button.
- Press [save].
- Press the On/Off button twice to exit programming and return to idle condition.

Operation

1. Press the button programmed for the extension to be called.
2. Lift the handset to talk privately.
3. Hang up when the conversation is completed.

Conditions

a) BLF/DSS buttons may be assigned to any of the 30 User Programmable Feature Keys.
b) Extensions in Do Not Disturb mode will cause the LED associated to that extension to flash red.
c) Extensions that are busy will cause the LED associated to that extension to light steady red.
d) The DSS function can be used to transfer calls to other extensions.
e) Each Digital Speakerphone has a default feature button mapping, refer to the Description and Installation sections for additional default mapping information.

Default Setting

All extensions are programmed for BLF/DSS buttons for extensions 101~112.

Programming Abstract

Refer to Flexible Feature Button Programming.

Busy Ring – Allow/Deny

FEATURE # 2 ABC

This feature allows the extension user the ability to turn on or off muted ringing of incoming or transferred calls when the user is in a busy status. When a CO line is ringing or transferred to a busy extension and Busy Ring is allowed, the user will hear muted ringing. When a CO line is ringing or transferred to a busy extension and Busy Ring is denied, the user will hear a single burst of warning tone. All programmed call forwarding and recall conditions apply in either Busy Ring condition.

Related Features

Transfer

Related Programming

CO Line - Call Abandon, Route, and Answering Position
Call Handling - XFER_B Recall

Operation – Setup

To deny Busy Ring:

Press FEATURE # 2 ABC

Confirmation tone will be heard, and the display will read:

BUSY RING DENY

To allow Busy Ring:

Press FEATURE # 2 ABC

Confirmation tone will be heard and the display will read:

BUSY RING ALLOW

Conditions

This feature may be programmed (F#3) under a flexible button on the Digital Speakerphone. No LED's will be in use and the button can be depressed and toggled to allow/deny this feature.

Call Operator / Attendant

0 OPER

The extension that is programmed as the Attendant may receive multiple internal calls via the programmed Operator Code. The Operator Code is "0" at default.

Related Features

Flexible Numbering Plan
Tenant Group

Related Programming

System Application - Operator Code
System Resource - Attendant

Default Settings

System Application – Numbering Plan – Operator Code – "Length" is set to 1 (one).
System Application – Numbering Plan – Operator Code – "Leading" is set to 0 (zero).
System Resource – Attendant – Tenant Group "1" is set to extension 101.
System Resource – Attendant – Tenant Group "2," and "3" is set to Null (none).
System Resource – Attendant – Alternate - Tenant Group "1,""2," and "3" is set to Null.

Conditions

a) The Operator Code is in addition to the default assigned three-digit intercom number for the extension.
b) The attendant three-digit extension number can be assigned to any feature button.

Programming Abstract

- Program the Operator Code Length if the necessary code should be longer than one digit.
- Program the Operator Code if the length is changed or some other digit is necessary to reach the system attendant.

- Program the extension to be assigned the system Attendant for each of the tenant groups.
- Program the extension to be assigned the system Alternate Attendant for each of the tenant groups.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Operator Code (Index 08-09-14):

- Input:
  - **08-09-14-01** to program **Operator Code – Length** (the length of this code may be 1-4 digits).

Or…

  - 08-09-14-02 to program the Operator Code – Leading Digit.
- Press [save]. This advances to the selected database item.
- Press [chg] to change the contents of this database item.
- For Length: press [chg] until the appropriate number of digits to dial for the operator code displays.
- For Leading Digit: input the actual code necessary for the attendant.
  For example, if Length is set to "1," the entire code is the "Leading Digit" (typically "0.") If the "Length" is "2," the resulting code will be two digits. The "Leading Digit" may be input as a single digit or both digits. See the table below for some examples:

Length	Leading	Resulting Code	Comments
1	0	0	Usual assignment. Users dial "0" to reach the system attendant.
2	0	00	System assigns the second digit beginning with 0 since no digit was input for the second digit. Users dial "00" to reach the system attendant.
4	0123	0123	All digits for the four digit long code are input. Therefore the code is fixed to the input digits. Users dial "0123" to reach the system attendant.

- Press [save].
- Press (volume up or down) to return to the DB Item Select screen. Or… use the [back] or [next] button to skip to the appropriate database item.

Program Operator Extension (Index 04-02):

- Press the Volume button (up or down) to return to the DB Item Select screen.
- Enter **04-02-1-01** then press [save]. The Attendant for Tenant Group 1 displays.
- Press [chg] to change the contents of this database item.
- Input the appropriate extension number that will serve as the Attendant for this tenant group.
- Press [save].
- Press [next], the DSS console(s) assigned to operate with the extension are displayed. (Note: These are display information only and cannot be changed in this programming parameter).

- Continue to press [next] until Alternate displays.

Or…

- Press the Volume button and input **04-02-1-06**, [save] to advance to the Alternate Attendant database item for this tenant group.

- Press [chg] to change the contents of this database item.
- Input the appropriate extension number that will serve as the Alternate Attendant for this tenant group.
- Press [save].
  - Press [next] to view DSS Console(s) assignments for this extension and to advance and select the next tenant group to program an Attendant and Alternate Attendant.

Or…

- Press the Volume button and enter the Index for the appropriate database item for the appropriate tenant group. Use the following table for Index information:

Index	Database Item Selected
04-02-1-01	Tenant Group 1 Attendant
04-02-1-06	Tenant Group 1 Alternate Attendant
04-02-2-01	Tenant Group 2 Attendant
04-02-2-06	Tenant Group 2 Alternate Attendant
04-02-3-01	Tenant Group 3 Attendant
04-02-3-06	Tenant Group 3 Alternate Attendant

- Press the Hold button to return to the previous menu level or press Volume to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "System Application." Then press Enter.
- Use ↓↑→← to highlight "Category 2." Then press Enter.
- Use ↓↑→← to highlight "Operator Code – Length."
- Press Enter until the appropriate code length displays.
- Use ↓↑→← to highlight "Operator Code." Then press Enter.
- Input the appropriate Operator Code. (See Flexible Numbering Plan for guidelines on how to assign directory numbers.)
- Press Enter.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.

- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Use ↓↑→← to highlight "System Resource." Then press Enter.
- Use ↓↑→← to highlight "Attendant." Then press Enter.
- Use ↓↑→← to highlight the Attendant or Alternate Attendant for the Tenant Group you wish to program. Then press Enter.
- Input the directory number of the extension.
- Press Enter.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Call Back – CO Line [cbck]

This feature allows you to queue a busy CO line and reserve that CO line for use when it becomes available. This feature eliminates the need for you to continually observe the line status for availability. You may only have one Call Back active at any time.

Related Features

Delete all Call Back (F##)

Related Programming

CO Line Assignment

Operation

1. Press a busy (solid Red LED) CO Line or CO Line group button, or dial a CO Line access group number (9, 800-806, 740~755). While the busy tone sounds, the display will read:

```
CO LN BUSY      XXX
```

2. Press [**cbck**] Interactive Soft Button or Dial [#] on the dial pad.

   Confirmation tone will be heard and the display will read:

   CBCK TO LINE XXX

   A few moments later, the display will return to an idle state.

   When the selected CO Line, or a CO Line in the selected CO Line group becomes available, fast ringing will be heard at the extension and the display will read:

   CBCK TO LINE XXX
   reply del

3. Press [**reply**] to be connected to available CO Line, and dial the appropriate number or

4. Press [**del**] to delete the CO Line callback if necessary.

Analog Ports (Single Line Telephones)

When you try to access a CO Line and get a busy tone, dial #.

Conditions

a) During call back alert tones, lifting the handset will directly connect the extension user to the selected CO Line calling back.
b) Every CO line can have Call Back requests by all extensions at the same time.
c) Every extension may Call Back only one busy CO line at the same time.
d) The Call Back Alerting Ring Time is 10 seconds. If the call back goes unanswered during the 10 seconds ring time the call back is canceled.
e) CO lines that have Call Back requests will recall the Call Back initiator. The Call Back CO line will become available to other extensions if the call back extension doesn't answer within 10 seconds.
f) Call Back from an extension using a Pooled Group button for access of CO lines will set the call back to all the lines in the Pooled Group. When any one of the lines in the Pooled Group becomes available the user must lift the handset or press the reply soft key to be connected to the available line from the Pooled Group.
g) During the time that the Call Back is recalling the initiator, a new incoming call will take precedence over Call Back and will be answered when the extension goes off hook.
h) To delete all active Call Back requests sent from your extension, dial Feature ##(F##).

Call Back – Extension [cbck]

This feature allows you to queue an extension, which is busy, in Do Not Disturb (DND), or idle. When you send a Call Back to a busy extension, the Call Back process will begin when the busy extension hangs up. When you send a Call Back to an idle extension, the Call Back process will begin once the user performs an operation at that extension and then hangs up.

When the Call Back process begins you will hear bursts of tone signaling you to pick up the handset or press the LCD soft key under 'reply'. Then the queued extension begins ringing.

Related Features

Intercom Mode Selection
Direct Station Selection
Voice Announce Hands-free Reply
Forced Intercom Tone Ring
Interactive Soft Buttons
Delete all Call Back (FEATURE # #)

Related Programming

Call Handling – Tenant Calling

Operation

1. Dial the extension directory number of the busy extension.

   If the extension you are calling is in Tone Ringing Mode, the display will show:

   ```
   EXT XXX
   Cbck  msg
   ```

   If the extension you are calling is busy, the display will show:

   ```
   EXT XXX   BUSY
   cbck  msg  next
   ```

2. Press [**cbck**]

   You hear the confirmation tone and Display will read

   ```
   CBCK TO EXT  XXX
   ```

   Your extension will return to idle status.

To Answer a Call Back:

1. When the Call Back begins (called extension is now available), your extension will ring a special Call Back alert ring for 30 seconds and the display will show:

   ```
   CALL BACK TO  XXX
    reply        del
   ```

2. Lift the handset or press the On/Off button.

Or…

3. Press [**reply**] to activate the Call Back.

To Cancel all Active Call Backs Prior to Receiving Call Back Alert Ringing:

1. Press FEATURE # #.

Operation – Analog Ports (Single Line Telephones)

When you try to access a CO Line and get a busy tone, dial # to send a Call Back to the extension.

Conditions

a) If you press [**del**] during the Call Back Alert ringing, the Call Back will be cancelled and the display will read.

   ```
   CBCK DELETE  XXX
   ```

   Your extension will return to an idle status.

b) To invoke a Call Back at an extension that is in the Voice Announce mode, you must first Force Tone Ringing (#).

c) If the Call Back is not answered during the reply alert ringing, the response message will be displayed until you press either [**reply**], or [**del**].

d) The Call Back process begins when both your extension and the called party's extension are in an idle, on-hook mode.

Call Duration Timer

This feature is enabled in the Database Programming on a per extension basis. When enabled, any outgoing CO line will be automatically timed and then dropped after the system "Warning Tone" time is exceeded. This feature is normally used to control outgoing call traffic.

Related Features

SMDR
Warning Tone
Warning Time

Related Programming

Call Handling - Call Duration Time

Conditions

The Call Timer begins after the Call Duration Time has expired.

Call Forward – Extension

There are many Extension Call Forward choices:

- All – Forward all of your calls.
- Busy – Forward your calls when your telephone is busy.
- Follow Me – Forward calls at your extension to the extension where you are currently working (conference room, associates office, etc.)
- Follow Preset – Invoke call forward at your extension so that it can be changed from another extension.
- No Answer – Forward your calls in no answer conditions.
- External – Forward your calls to another location or different telephone number. (This feature must be enabled for your extension in database administration.)

Forward conditions may be set as follows for each call forward type:

- Intercom calls only.
- Intercom and CO Line (including transferred CO Lines) calls.
- CO Line calls only.

Related Features

Do Not Disturb
Forced Intercom Call Forward
Message Waiting
Forced Intercom Tone Ring
Intercom Mode Selection

Related Programming

Extension - Receive Assignment
CO Line - Line Assignment
Call Handling - XFR_I Recall, XFR_B Recall, CO Line Preset CFW

Operation – Setup

Press FEATURE 2 ABC. The display will show:

```
CALL FORWARD
 all  busy next
```

All Call Forward

1. Press [all]. The display will read:

```
ALL FWD.
bksp  save chg
```

2. Input the directory number (extension or Hunt Group) where calls are to be forwarded.
3. Press [save]. Display will show:

```
ALL FWD     XXX
 co  icm/co icm
```

4. Select the type of calls to forward.
   - co = CO Line incoming or transferred calls
   - icm/co = both intercom and CO Line calls
   - icm = intercom calls only.

   You hear the confirmation tone, the extension returns to idle, the Auxiliary Lamp is lit green, and the display shows FWD in the middle of the bottom row.

Busy Call Forward

1. Press [busy]. The display will read:

```
BUSY FWD.
bksp  save chg
```

2. Input the directory number (extension or Hunt Group) where calls are to be forwarded.
3. Press [save]. Display will show:

```
BUSY FWD     XXX
 co  icm/co icm
```

4. Select the type of calls to forward.
   - co = CO Line incoming or transferred calls
   - icm/co = both intercom and CO Line calls
   - icm = intercom calls only.

   You hear the confirmation tone, the extension returns to idle, the Auxiliary Lamp is lit green, and the display shows FWD in the middle of the bottom row.

No Answer Call Forward

1. Press [next]. The display will read:

```
CALL FORWARD
n_ans ext follow
```

2. Press [n_ans]. The display will read:

```
NO_ANS FWD.
 bksp save chg
```

3. Input the directory number (extension or Hunt Group) where calls are to be forwarded.
4. Press [save]. Display will show:

```
NO_ANS FWD. XXX
 co  icm/co icm
```

5. Select the type of calls to forward.
   - co = CO Line incoming or transferred calls
   - icm/co = both intercom and CO Line calls
   - icm = intercom calls only.

   You hear the confirmation tone, the extension returns to idle, the Auxiliary Lamp is lit green, and the display shows FWD in the middle of the bottom row.

External Call Forward

Note: You cannot External Call Forward station 101.

1. Press [next]. The display will read:

```
CALL FORWARD
n_ans ext follow
```

2. Press [ext]. The display will read:

```
bksp save chg
```

3. Input the telephone number (cell phone, other office, etc.) where calls are to be forwarded.
4. Press [save].

   You hear the confirmation tone and the display briefly shows the telephone number where CO Line transfers will be routed. The extension returns to idle, the Auxiliary Lamp is lit green, and the display shows FWD in the middle of the bottom row.

Follow Call Forward

1. Press [next]. The display shows:

```
CALL FORWARD
n_ans ext follow
```

2. Press [follow]. The display will read:

```
FOLLOW ME
preset    remote
```

Follow Me From another extension to this extension:

1. Press [remote]. The display shows:

```
REMOTE SELECTION
      del  set
```

2. Press [**set**]. The display shows:

```
FOLLOW FM
 bksp save chg
```

3. Input the extension number where calls are to be forwarded from.
4. Press [**save**]. The display shows:

```
FOLLOW FM   XXX
 co  icm/co icm
```

5. Select the type of calls to forward.
   - co = CO Line incoming or transferred calls
   - icm/co = both intercom and CO Line calls
   - icm = intercom calls only.

   The display shows:

```
PSWD   :
 bksp save chg
```

6. Input the password of the extension where the calls are to be forwarded from.
7. Press [save]. You hear the confirmation tone, the extension returns to idle, and the display shows FORWARD FROM XXX.

Follow Me from this extension to another extension:

1. Press [**preset**]. The display shows:

```
FOLLOW TO
 bksp save chg
```

2. Input the extension number where calls are to be forwarded from.
3. Press [**save**]. The display shows:

```
FOLLOW FM   XXX
 co  icm/co icm
```

4. Select the type of calls to forward.
   - co = CO Line incoming or transferred calls
   - icm/co = both intercom and CO Line calls
   - icm = intercom calls only.

   You hear the confirmation tone, the extension returns to idle, and the display shows FORWARD FROM XXX.

Analog Ports (Single Line Telephones) – Activate

Call Forward may be invoked for several operation modes. Each mode may also be invoked for these call conditions:

1 = CO calls only, 2 ABC = CO and Intercom calls, 3 DEF = Intercom calls only.

Immediate Forward: dial # 2 ABC 2 ABC, (extension #), 1 /2 ABC /3 DEF option.

Busy Forward: dial # 2 ABC 1, (extension #), 1 /2 ABC /3 DEF option.

No Answer Forward: dial # 2 ABC 4 GHI, (extension #), 1 /2 ABC /3 DEF option, t^1, t^2.
(t^1 + t^2 are time settings. t^1 is - time the first call to your extension following inactivity at your extension will ring before forwarding. t^2 is the time all calls after the first to your extension will ring before forwarding.)

Follow Me Forward: dial #, 2ABC, 3DEF, (your extension #), 1/2ABC/3DEF option, your extension password. (Calls to your extension will ring at this extension.)

Follow To Forward: dial #, 2ABC, 5JKL, (extension #), 1/2ABC/3DEF option.

Operation – Delete Forward

1. Press middle Interactive Soft Button (under the "FWD" in the display).

   Each active mode of forward will be displayed, e.g.:

   ```
   BUSY FWD.    XXX
    del more
   ```

2. If this forward is to be deleted, press [del]. Otherwise…
3. Press [more] for other active forward settings.

Analog Ports (Single Line Telephones) – Cancel Forward

Cancel Immediate Forward: dial #, *TONE, 2ABC, 2ABC.

Cancel Busy Forward: dial #, *TONE, 2ABC, 1.

Cancel No Answer Forward: dial #, *TONE, 2ABC, 4GHI.

Cancel Follow Me Forward: dial #, *TONE, 2ABC, 3DEF.

Cancel Follow To Forward: dial #, *TONE, 2ABC, 5JKL.

Conditions

a) Regardless of whether the extension where calls are being forwarded is a Digital Speakerphone or single line telephone, the user at the forwarded extension will hear special Intercom Reminder tone signifying that Call Forward is activated.
b) The Auxiliary Lamp will not light green in call forward mode if that function has been disabled via the attendant in Attendant Administration.
c) If a Flexible Feature Button has been programmed for Call Forward mode. The LED associated tot hat button will light red indicating the telephone is in call forward mode.
d) External Call Forward will forward only transferred CO Line calls.
e) Extension invoked call forwarding overrides any applicable Predefined Call Forward database programming while in effect. When the extension forward mode has been released the Predefined Call Forward programming is active again.

Default Settings

Extension – ECF Operation = N. (Range is Y/N.)
Call Handling – External CFW – Service = Always. (Range is Never, Day, Evening, Always).
Call Handling – External CFW – Talk Time = 5 (Range is 1,2,3,5,10,15 minutes).

Programming Abstract

- Program the appropriate extension for the use of External Call Forward.
- Program the appropriate changes (if any) to the Talk Time and Service modes of operation for ECF.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program an extension for External Call Forward (Index 01-101~156-18):

- Input **01-101~156-18** (for the extension number to program).
- Press [save]. This advances to the selected extension ECF database item.
- Press [chg] until the appropriate value displays.
- Press the Volume button (up or down) to return to the DB Item Select screen.

Program the various system External Call Forward parameters:

- Input **03-32-01** to program the appropriate Service Mode for use with External Call Forward.
- Press [save]. This advances to the ECF Service Mode database item.
- Press [chg] to until the appropriate value displays.
- Press [next] to advance to External Call Forward Talk Time.
- Press [chg] until the appropriate value displays.
- Continue making other database changes.
- Exit programming mode when changes are complete.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.

Program the extension for the ability to use External Call Forward:

- Use ↓ ↑ → ← to highlight "Extension." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 2." Then press Enter.
- Use ↓ ↑ → ← to highlight "ECF Operation."
- Then press Enter until the appropriate value displays.
- Continue making changes for other extensions as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.

- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program the various system External Call Forward parameters:

- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight "Category 2." Then press Enter.
- Use ↓↑→← to highlight either database item "External CFW – Service" or "External CFW – Talk Time." Then press Enter until the appropriate value displays for the data item.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Call Forward – CO Line Predefined (No Answer condition)

Incoming CO Lines can be designated to forward via a system timed setting to a predefined system resource. The predefined forward destination can be an extension, UCD Group (includes Voice Mail and Hunt Groups) or Virtual Number. One predefined location is available per CO Line regardless of status of ringing mode - Day, Evening, Alternate or Timed. The line will forward to the predefined destination after the programmed CO Line Preset FWD timer has expired.

Call Forward – CO Line Predefined is a No Answer condition forward.

Related Features

Call Forward – Extension
Call Forward - Extension – Predefined
CO Line Answering Position
Uniform Call Distribution Groups

Related Programming

CO Line - Line Type, Answering Position
Call Handling - CO Line Predefined CFW
Extension Application - Uniform Call Distribution
Extension - Line Assignment, Receive Assignment

Conditions

a) Call Forward - CO Line Predefined is a system programmed feature and will follow the programmed conditions unless an extension call forward has been enabled and the timer for the extension call forwarding is programmed at a shorter time than the Predefined timer.

b) Ringing at the "DAY" and "EVE" assigned locations continues until the CO Line has been answered.

c) When CO Lines are Call Forwarded – Predefined to the DX-80 Voice Mail system, special handling of the ringing line occurs. The directory number of the CO Line (740-755) is sent to the VM system so that automated attendant handling can be customized for the CO Line to be answered.

Default Settings

Call Handling – Predefined Forward Time = 10 seconds. (Range is 6-30 seconds in 2 sec. Increments.)

CO Line – Answering Position – Pre-CFW NoAns = "NULL" (no destination) for all CO lines. (Range is any Extension, UCD, or Virtual directory number.)

Programming Abstract

- Program the Predefined Forward Time for the amount of time that should elapse before CO lines are routed to the Predefined destination.
- Program the Predefined Forward destination for each CO line to be forwarded.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Enter **02-ccc-13- 03** to program the **Predefined No Answer** destination for each **CO Line** to be forwarded (where "ccc" = the CO Line directory number).

CO Line 1 = 740
CO Line 2 = 741
CO Line 3 = 742
CO Line 4 = 743
CO Line 5 = 744
CO Line 6 = 745
CO Line 7 = 746
CO Line 8 = 747
CO Line 9 = 748
CO Line 10 = 749
CO Line 11 = 750
CO Line 12 = 751
CO Line 13 = 752
CO Line 14 = 753
CO Line 15 = 754
CO Line 16 = 755

- Press [save]. This advances to the selected CO Line Predefined Call Forward No Answer database item.
- Press [chg] to change the value of this data item.
- Input the appropriate destination. Valid entries are extension directory number (101-156), UCD/Hunt Group Directory Numbers (410-433), or Virtual Directory Numbers (700-729)
- Press [save] to store this new data.
- Continue making other changes as required.
- Exit programming mode when changes are complete.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.

- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.
- Use ↓↑→← to highlight "CO Line." Then press Enter.
- Use ↓↑→← to highlight "Answering Position." Then press Enter.
- Use ↓↑→← to highlight "Pre-CFW NoAns." Then press Enter.
- Press Enter to change the data item value.
- Input the appropriate No Answer destination for this CO Line. Then press Enter.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Call Forward – Extension Predefined

Extension Predefined Call Forwarding will forward calls directly to the associated directory number for the programmed condition. Extension Predefined Call Forward affects ringing intercom calls and transferred calls. The programmed Extension Predefined Forward is a single step only forward destination. (No secondary or tertiary steps can be assigned.) Two destinations may be assigned based on station status, Busy and No Answer. That is, the first step destination may be different for busy calls and calls that go unanswered.

The condition "Wrong Number Destination" is provided for routing of calls to directory numbers that are unequipped. That is, the programmed destination is where calls will be routed when the associated directory number is dialed.

Related Features

Call Forward – Extension

Call Forward – CO Line Predefined

Related Programming

Call Handling - CO Line Preset Call Forward

Conditions

a) Calls that are forwarded to the DX-80 Voice Mail system via any extension call forward include special handling. The extension directory number is sent to the VM system with the call to identify the mailbox where this call should be routed.

b) Call Forward – Extension settings (user invoked call forward) supersede Call Forward – Predefined settings.

Default Setting

Extension – Predefined FWD – Wrong # = Null for all extensions. (Range: any extension or directory number.)

Extension – Predefined FWD – Busy = Null for all extensions. (Range: any extension or directory number.)

Extension – Predefined FWD – No Answer is set at Null for all extensions. (Range: any extension or directory number.)

Call Handling – Predefined FWD Time is set at 10 seconds (Range is 6-30 seconds in 2 second increments).

Programming Abstract

- Program the appropriate destination for Wrong #, Busy and No Answer conditions as required for each extension.
- Program the appropriate No Answer Predefined FWD Time if required.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program the appropriate extension(s) for Predefined Call Forward (Wrong #, Busy and No Answer):

- Input **01-101~156-29** (for the extension number) to program the appropriate extension **Wrong # Dest**ination.

Or…

- Input **01-101~156-30** (for the extension number) to program the appropriate extension **Busy Dest**ination.

Or…

- Input **01-101~156-31** (for the extension number) to program the appropriate extension **No Ans Dest**ination.

- Press [save]. This advances to the selected extension Predefined Forward database item.
- Press [chg] to change the value of this data item.
- Input the appropriate destination (this may be an extension number or UCD/Hunt Group number).
- Press [save].
- Press the Volume button (up or down) to return to the DB Item Select screen.

Or…

- Use [back] or [next] to go to the appropriate database item for change.

Program the Predefined Forward Time as required:

- Press Volume button (up or down) to return to the DB Item Select screen.
- Input 03-39 to program the system Predefined (No Answer) Call Forward Time.
- Press [save]. This advances to the Predefined FWD Time database item.
- Press [chg] until the appropriate value displays.
- Continue making other database changes, or... exit programming mode when changes are complete.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.

Program the appropriate extension for the Predetermined Call Forward modes required:

- Use ↓↑→← to highlight "Extension." Then press Enter.
- Use ↓↑→← to highlight "Predetermined FWD." Then press Enter.
- Use ↓↑→← to highlight "Wrong # Dest.," "Predef FWD Busy Dest.," or "Predef FWD NoAns Dest." for the appropriate extension (extensions are listed along the left side of the screen under the column "DIR#).
- Press Enter select this database item for change.
- Input the destination directory number (extension or UCD/Hunt Group) then press Enter.

Note: Frequently the destination for a predefined forward – no answer condition will be to the VM UCD/Hunt Group, that directory number is 433.

- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program the Predefined Forward Time as required:

- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight "Category 3." Then press Enter.
- Use ↓↑→← to highlight "Predefined Forward Time."
- Press Enter until the desire time displays.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Call Park / Call Park Answer

FEATURE 7PQRS 3DEF

This feature allows you to "Park" a call at any extension. It also is used to retrieve a parked call from any extension. Calls are parked and retrieved by dialing the Call Park code (Feature 73) followed by the extension number where the call is to be/has been parked.

Call Park is very similar to Transfer except there is no ringing at the park destination.

The DX-80 Call Park method eliminates multiple call park codes by using the same code followed by the user extension number for multiple calls parked to one extension number.

Related Features

Flexible Feature Button Programming
Pick up Groups
Transfer (Idle/Busy Recall Timers)

Related Programming

Extension - Tenant Group, Paging Group, Paging Allow, Pick Up Groups
Call Handling - Hold Recall, Hold Abandon Time, (Park Remind)

Operation – Park Call

1. While connected to a CO Line call, press FEATURE 7PQRS 3DEF or press a button programmed for this Call Park code.
2. Dial the extension number where this call is to be parked, or press the DSS button of the extension where this call is to be parked.
3. The CO Line call is parked at that extension.
4. Go on-hook or proceed with other system functions.

Note: Multiple calls may be parked on one extension.

Operation – Call Park Answer

1. While the extension is idle, press FEATURE 7PQRS 3DEF or press a button programmed for this Call Park code.
2. Dial the extension number where this call is to be parked, or press the DSS button of the extension where this call is to be parked.
3. You are connected to the call.

Analog Ports (Single Line Telephones)

1. Dial # 7PQRS 3DEF.
2. Dial the extension number where the call is parked.

Conditions

a) Each telephone/extension has one personal extension number used to park one CO line call.
b) From your telephone you can park a call at any assigned and installed extension number.
c) The Call Park feature code may be programmed on any programmable feature button.
d) Calls can be retrieved from any extension.
e) CO lines that have been parked are on Transfer Hold at the extension that where the call was parked and on I-Hold at the extension that parked the call.

f) Any extension can retrieve a “parked” CO line, even if the extension is normally not allowed to access or receive a call on that line.

g) A user invokes “Call Park Answer” and has no CO line button for the line retrieved from call park may use Hold Call Answer to place the call on hold and retrieve the call from hold.

h) The Call Park Answer feature code may be programmed on any programmable feature button.

i) Calls that are parked follow the Transfer Recall Timer and will ring the initiating extension when that timer has elapsed.

Programming Abstract

Use the related feature definition programming instructions to program the various related operations.

Call Pick Up – Group

You may answer calls ringing at another extension using the Call Pick Up Group feature. This feature allows you to easily access calls ringing in your group via the single digit code *TONE. Calls ringing at extensions in other pick up groups may also be answered using the code assigned to that pick up group. (Pick Up Group 1 is assigned “440,” PU Group 8 is assigned “447.”)

Use Call Park Pick Up (reference Call Park) to retrieve calls in a Directed Call Pick Up manner.

If multiple calls are ringing at an extension, a priority list determines which call will be answered first:

Call Pick Up Priority List

Camped - On CO Line Calls
Recalling CO Line Calls
Transferred CO Line Calls
Incoming CO Line Calls
Tone Ringing Intercom Calls

Related Features

Call Park
Transfer
Intercom Tone Ringing
Tenant Group

Related Programming

System Application - Extension DIR Number, CO Line DIR Number, Virtual Number
System Application - Extension Pickup Group, Extension Hunt Groups
Extension - Tenant Group, Pickup Group,

Operation

When you hear another extension in your pickup group ringing, press *TONE.

Or…

When you hear an extension in another pickup group ringing, dial that Pick Up Group number (440-447).

Analog Ports (Single Line Telephones) – Extension (Direct) Call Pickup

1. Dial the extension number of the ringing extension.
2. Dial 6MNO.

Analog Ports (Single Line Telephones) – Group Call Pickup

When you hear another extension in your pickup group ringing, press *TONE.

Or…

When you hear an extension in another pickup group ringing, dial that Pick Up Group number (440-447).

Conditions

a) If the call at the dialed extension has stopped ringing, you will hear error tone and the display on a Digital Speakerphone will show "PICKUP FAILURE."
b) A extension that doesn't have the outside line appearing on a button or doesn't have CO Line Receive programmed may still answer the ringing line by the Call Pick Up procedure.
c) The Call Pick Up feature code may be programmed on any programmable feature button.
d) If several calls of the same priority are ringing at the extension, the calls are answered in the order they are received.

Default Settings

System Application – Numbering Plan – Ext. Pickup Group – Length is set to 3. (Range is 1-4.)

System Application – Numbering Plan – Ext. Pickup Group – Leading 1 is set to 44. (Range is any available, non-conflicting directory number.)

System Application – Numbering Plan – Ext. Pickup Group – Leading 2 and 3 are set to Null (none). (Range is any available, non-conflicting directory number.)

Programming Abstract

- Program the Ext. Pickup Group Length if the necessary code is not three digits long.
- Program the Ext. Pickup Group Leading Digits (1,2,3) if the necessary code is not 440-446.
- Refer to Flexible Numbering Plan for programming instructions.

Caller ID to Analog Ports (Standard)

The Caller ID feature requires Incoming Caller Identification as facilitated by the local telephone company. This telephone company feature requires a subscription to the telephone company service to operate.

When Caller ID data is received on CO Lines connected to the DX-80 system this caller ID data is re-broadcast to analog devices connected to analog ports of the DX-80 system. This means that standard analog telephones that support the telephone company enabled Caller ID will function for this purpose even when connected "behind" the DX-80 system as a system extension.

Since the equipment to interface this telephone company feature is standard on CO lines, the DX-80 will display this caller ID information when delivered from the telephone company to all extensions programmed to ring on incoming calls. All Analog Port devices will also be delivered this data in standard CID format.

In addition to displaying telephone company CID, the DX-80 enhances analog port interface by providing call progress data to analog ports for system internal calling. Calls to an analog port will be delivered to the analog port with CID format data identifying the internal extension (and user name if programmed) placing the call.

Related Features

Caller ID
Caller Identification Table
SMDR

Conditions

a) Caller ID will supersede internal calls. That is, when an extension transfers a call to an analog port the display at the analog device will indicate the CO Line caller ID data, not the internal extension data.
b) CID follows transferred calls.

Caller ID (Standard on all CO Lines)

The Caller ID feature requires Incoming Caller Identification as facilitated by the local telephone company. This telephone company feature requires a subscription to the telephone company service to operate.

The DX-80 system is equipped standard to receive Type 1Caller ID data from the telephone company on all CO Line interfaces. This data when received by the telephone company will be displayed on all ringing digital speakerphones, Caller ID equipped wireless/wired Single Line Telephones and Voice Mail ports.

Related Features

SMDR

Operation – Options at a Digital Speakerphone

1. When CO Lines with CID data have been answered, the left LCD Interactive button can be used to toggle the displayed data between Name received and Number received. An example follows:

```
LINE 5      00:44
JAMES SCOTT
```

2. Press the Left Interactive button to view the telephone number:

```
LINE 5      00:44
8135551401
```

3. Press the Left Interactive button to return to the name display.

Conditions

a) CID data will only be displayed when it is received from the telephone company as part of the service subscription.

b) The center interactive button can be used while active on a CO line call to momentarily view the idle extension display information (time and date, etc.)

Caller Identification Table – Callback

FEATURE 6 MNO #

Caller Identification information for one hundred (100) calls is stored in a Call Table. While reviewing the calls, you will have the option to dial the number, obtain more information for the particular call, and delete the call.

Related Features

Caller ID
Attendant
Extension Password
SMDR Call Output

Related Programming

Call Handling - CID Programming Code
System Resource - CID Name Table Assignment, CID Name Table Programming

Operation

1. While in an idle condition (not involved in any calling), press the CID Table code FEATURE 6 MNO #. You are prompted to enter a password.
2. Input the attendant extension password.
3. Press [**show**]. The display shows:

```
CID CALL TABLE
USE VOL +/- KEYS
```

4. Use the the Volume button (up or down) to go through the Caller ID Table. Up reviews the list from the most recent. Down reviews the list from the oldest recorded. The default password is 9999.
5. Each logged call has three screens that may be viewed. The first screen in view is the Name screen, which displays the name received for this call. Press [more] to view the next screens (Number screen, Time and Date screen). The screen sequences are shown below:

```
JOHNSON BILL
dial  more  del

8135551401
dial  more  del

 9/19  4:32 PM
dial  more  del
```

6. Press [del] to delete a logged call.
7. Press [dial] to dial a logged call.

Conditions

a) You can at any time exit the Caller ID Call Table mode.
b) Any Digital Speakerphone user can review the Caller ID Table if the Attendant Password is known, but the table can be reviewed by only one telephone at a time.
c) If no name is delivered from the telephone company, the number only will be displayed.
d) Proper programming of local area code(s) and long distance prefix are required to assure accurate redial of CID numbers from the Caller ID Table.

Default Settings

Call Handling – CID Programming Code – International Prefix = Null.
(Range is – any 4 digits.)
Call Handling – CID Programming Code – Country Code = Null.
(Range is – any four digits.)
Call Handling – CID Programming Code – Long Distance Prefix = Null. (Empty.)
Call Handling – CID Programming Code – Local Area Code – Area Code eight tables are set at Null. (Empty.)
Call Handling – CID Programming Code – Local Area Code – Area Prefix eight tables are set at Null. (Empty.)

Programming Abstract

- Program the International Prefix (typically not required in the USA or Canada).
- Program the Country Code (typically not required in the USA or Canada).
- Program the Long Distance Prefix (usually 1).
- Program the Local Area Codes and enter them as the prefix to dial if it is required for callback.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program CID codes required for seamless CID callback operations in the DX-80:

- Input **03-25** to program the International Prefix.

Or…

- Input **03-26** to program the Country Code.

Or…

- Input **03-27** to program the Long Distance Prefix.

Or…

- Input **03-28** to program the Local Area Code Tables.

- Press [save]. This advances to the selected database item.
- Press [show] to view the contents of this database item.
- Press [chg] (change) the contents of this database item.
- Input the actual code required for the selected function. (For example, "011" for international code.)
- Press [save].
- Press the Volume button (up or down) to return to the DB Item Select screen. Or… use the [back] or [next] button to skip to the appropriate database item.

Local Area Code programming:

- Local Area Code Programming requires two entries; first the local area code, then the code required (usually the same code) as a prefix when this telephone number is dialed from CID memory.
- Press the Volume button (up or down) to return to the DB Item Select screen.
- Enter **03-28** then press [save].
- Press [show], Area Code table 1 displays.
- Press [chg] to change the contents of this database item.
- Input the actual local area code that will be received with CID from the local calling area.
- Press [save].
- Press [next], This area code prefix displays.
- If the area code must be dialed to complete local calls within that area code, press [chg].
- Enter the prefix code here (usually the same digits as the area code) so that local calls dialed from redial/callback operations to telephone numbers received via CID include this code.

Note: The Area Prefix may be left empty (Null) for callbacks to a local area code – that do not require the area code to be dialed.

- Press [save].

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.

- Use ↓↑→← to highlight “Call Handling.” Then press Enter.
- Program CID codes required for seamless CID callback operations in the DX-80:
- Use the cursor positioning arrows to highlight “Call Handling.” Then press Enter.
- Use ↓↑→← to highlight “CID Prog. Code.” Then press Enter.
- Use ↓↑→← to highlight the code to be programmed; “Inter. Prefix Code,” “Country Code,” “Long Dist Prefix Code,” or “Local Area Code.”
- Press Enter to change the data item value.
- Input the required Telephone Company code then press Enter.
- Continue programming other database items as required.

Local Area Code programming

- Local Area Code Programming requires two entries:

The local area code.

The same code if it is required for dialing back calls from that area code.

- For example, for local calls from area code 480 that must be dialed with that area code whenever this number is called back:

  “480” must be programmed as a Local Area code so that the callback operation will not preface the number with the long distance code (typically “1”).

  “480” must be programmed as the Area Prefix for Local Area Code “480” so that the digits “480” are dialed whenever this local number is called back.
- Use ↓↑→← to highlight Local Area Code then press Enter. The Local Area Code Table displays.
- Use ↓↑→← to highlight the appropriate Area Code/Area Prefix to program.
- Press Enter to select this database item.
- Input the required area code or prefix for the area code selected then press Enter. This data is now stored on this active screen.
- Continue making other changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Camp On – Extension [camp]

Camp-On is used to privately alert a busy extension for immediate consultation. Camp-On alert tone is heard at the busy extension when the initiator invokes the Camp On. The party currently speaking with the busy extension does not hear the tone.

Related Features

Music On Hold

Operation

1. Call a busy extension. The display shows:

```
EXT 102     BUSY
cbck msg  next
```

2. Press [**next**]. The bottom line on the display changes to:

```
camp voice intru
```

3. Press [**camp**]. Camp On alert tone is heard at the busy extension and the display shows:

```
CAMP ON EXT 103
```

4. When the busy extension goes on hook or places the current call on hold, the Camp On begins to ring that extension.

Analog Ports (Single Line Telephones)

When you call a busy extension, dial 4 GHI and wait for an answer.

Conditions

a) Each extension can have only one Camp On at the same time.
b) While waiting for a busy extension (Camp On invoked), the music connected to MC2 is heard.

Class of Service – Extension

The system provides eight (8), Classes of Service (COS) for assignment of outside line dialing-privileges. Each system Extension may be assigned one Day COS and one Evening COS. The Extension COS is primarily used for restriction and control of long distance dialing. Toll restriction tables allow customized dialing privileges to be assigned to any or all COS.

System Speed Dial is specially linked with an Extension's COS such that all speed dial numbers may override toll restriction programming if designated to do so in Call Handling programming.

Related Features

Toll Restriction

Account Code

Related Programming

Restriction – Toll Restriction, Account Code
Extension – Day Class of Service
Extension – Evening Class of Service
Call Handling – System SPD Toll Check

Default Settings

Extension – Class Of Service – Day = 0 for all Extensions. (Range is 0-7.)
Extension – Class Of Service – Eve = 0 for all Extensions. (Range is 0-7.)
Restriction – Toll Restriction – Interval 001 is set for all calls allowed and all COS (0-7). (See Toll Restriction for specific programming of the toll tables.)

Programming Abstract

Program the Extension to follow the toll table programming Allow Digit Interval by assigning the associated Day operation COS and Evening operation COS.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Extension COS per Extension and system operating mode (Day/Evening) (Index 01-101~156, where "101~156" = the Extension directory number):

- Enter **01-101-05** to program Extension 101 Day COS. (COS can be 0-7.)

Or…

- Enter 02-101-06 to program Extension 101 Evening COS. (COS can be 0-7.)
- Enter **02-101-06** to program Extension 101 Evening COS. (COS can be 0-7.)
- Press [save]. This advances to the selected database item.
- Press [chg] until the appropriate OCS displays.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.
- Use ↓ ↑ → ← to highlight "Extension." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.

Program Extension COS as required:

- Use ↓ ↑ → ← to highlight "Day Class" or "Eve Class."
- Press Enter until the appropriate COS displays.
- Continue programming other database items as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Alternate Route

CO Line Alternate Route works with the DX-80 system CO Line Groups. When this feature is invoked users may be routed over CO Line groups that they did not necessarily access. This feature is useful in high traffic environments when the use of secondary and tertiary CO Line selections may periodically be required.

When a user accesses a CO Line Group and all of the CO Lines in this group are in use, the user is automatically ported-over to the defined secondary and then to the defined tertiary CO Line group. Special handling of calling is accommodated with Delete Digits and Insert Digits to actuate any CO Line specific call handling required on the secondary and tertiary CO Lines if used with the telephone number dialed.

Related Features

CO Group

CO Line Class of Service

Related Programming

CO Line - CO Group
CO Line Application - Alternate CO Group

Operation

Dial access (or press pre-programmed Flexible Feature Button) to the primary CO Line group for placing the call. If this CO Line Group is unavailable another will be selected according to the Alternate Group programming.

Conditions

a) When CO Lines in all groups are busy, busy tone will be heard and a busy message will be displayed in the LCD.

b) A user may invoke callback to the first selected CO Line group by pressing the [cbck] button.

Default Settings

All CO Line Groups are set as follows for Alternate assignments:

CO Line Application – Alternate CO Line Group 1 is set to 0 (no alternate).
CO Line Application – Alternate CO Line Group 2 is set to 0 (no alternate).
CO Line Application – Alternate CO Line Group 1 and 2 – Delete Digits is set to 0 (delete nothing).
CO Line Application – Alternate CO Line Group 1 and 2 – Inserted Digits" is set to Empty (insert nothing).

Programming Abstract

- Program the CO Group for an alternate route (via another group) if required.
- Program the Alternate Route for digit insertion/deletion as required to place the dialed call over the selected alternate route.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program CO Line Groups for Alternate CO Line Groups (Index 07-01-xx-03, where "xx" = the CO Line Group for which Alternate Routing must be setup):

- Input **07-01-xx-03** to program Alternate Routing for CO Line Group "xx."
- Press [**save**]. This advances to Alternate CO Group.
- Press [**show**]. The display shows ALTER. CO GP :_.
- Input the Alternate Route to program (1 for first alternate, or 2 for second alternate) for this CO Line Group.
- Press [**show**]. The display shows CO GP NUMBER : X. (Where "x" is the current programming, "0" means no alternate route.
- To change this Alternate Route selection, press [**chg**].
  - Input the CO Line Group that is to be used as the (1st or 2nd) Alternate Route for this CO Line Group.
  - Press [**save**].
- Press [**next**] to advance to the Delete Digits for this Alternate Route selection.
- If it is necessary to delete digits from the dialed digits when calls are routed to this alternate, put in the number of digits to delete here.
  - Press [**chg**]. Input the quantity of digits to delete from the beginning of the number dialed. (0-9)
  - Press [**save**].
- Press [**next**] to advance to the Inserted Digits for this Alternate Route selection.
- If it is necessary to insert digits before sending the dialed digits when calls are routed to this alternate, input the actual digits required here.
  - Press [**chg**]. Input the required digits. (Up to 16 digits may be inserted.)
  - Press [**save**].
- Press [**next**]. The display shows "ALTER. CO GP :_." The next Alternate Route may now be programmed for this CO Line Group (if required).
- Input the Alternate Route to program (1 for first alternate, or 2 for second alternate) for this CO Line Group.
- Press [**show**] and continue programming as per the first alternate programming.
- When finished programming Alternate CO Line Routes, press the Volume button (up or down) to return to the DB Item Select screen. Or… use [**back**] or [**next**] button to skip to the appropriate database item.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.
- Use ↓↑→← to highlight "System Application." Then press Enter.
- Use ↓↑→← to highlight "Category 2." Then press Enter.

Program CO Line Groups for Alternate CO Line Groups:

- Use ↓↑→← to highlight "CO Line Application." Then press Enter.
- Use ↓↑→← to highlight "Alternate CO Group." Then press Enter. (Notice the display header "CO Line Application - Alternate CO Group1: [1/2]." The "[1/2]," indicates that this is the first of two pages for this

database programming. Page 1 is Alternate Route 1 for this CO Line Group. Page 2 is Alternate Route 2 for this CO Line Group.)

- Use ↓ ↑ → ← to highlight the database item to be changed: "CO Group Number," "Delete Digits," "Inserted Digits."
- Press Enter to change the data item value.
  - For "CO Group Number," input the CO Line Group that should be used as the alternate for this CO Line Group. Then press Enter.
  - For "Delete Digits," input the quantity of digits to delete at the beginning of the actual digits dialed when this alternate route is used. Then press Enter.
  - For "Inserted Digits," input the actual digits to insert before sending the actual dialed digits when this alternate route is used. Then press Enter.
- Continue programming other database items as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Assignment

CO Line Assignment is the DX-80 system utility used to assign CO Lines to extensions for out-calling access. The DX-80 system allows the assignment of CO Lines to extensions in a matrix fashion such that complete flexibility is possible. Each CO Line may be assigned individually as accessible or not accessible by each extension.

Related Features

Tenant Group
CO Line Group
CO Line Private Line To

Related Programming

Extension - Line Assignment
CO Line - Tenant Group, CO Line Group, Private To

Operation

Press an available (idle) CO Line button or dial a CO Line Group access code (9, 800-806)

Conditions

a) An extension that attempts access to a CO Line that is not assigned for access at that extension will hear error tone and the display will show: CO LN UNAVAIL.
b) Extensions that are not assigned access to a CO Line may receive that CO Line via Transfer. However once the transferred call is disconnected, that extension cannot re-access the same CO Line for use.

c) Tenant Group programming of extensions and CO Lines also dictates which CO Lines an extension can access. See Tenant Group.

Default Settings

All DX-80 extensions are allowed access to all equipped (hardware installed) CO Lines.
All CO Lines are assigned in Tenant Group 1. (Range is 1-3.)
All CO Lines are assigned in CO Line Group 1. (Range is 1-8.)

Programming Abstract

Program the required extensions for Line (CO Line) Access per CO Line.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program extensions for CO Line Access. (01-101~156-23-01~16):

- Enter 01-xxx-23-yy to program "xxx" Extension for "yy" CO Line access.
- Press [save]. This advances to CO Line Access for extension "xxx" and CO "yy."
- Press [chg] until the appropriate value for this database item displays (Y/N).
  - Press the Volume button (up or down) to return to the DB Item Select screen and input another extension and CO Line

Or…

  - Press [back] or [next] to select the previous or next sequential CO Line for the selected extension.
  - Press [chg] until the appropriate value for this database item displays.
- When finished programming CO Line Access, press the Volume button (up or down) to return to the DB Item Select screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program CO Line Access:

- Use ↓ ↑ → ← to highlight "Extension." Then press Enter.
- Use ↓ ↑ → ← to highlight "Line Assignment." Then press Enter. (Notice the display header "Extension – [1/05]." The "[1/05]," indicates that this is the first of five pages for this database screen. Page 1 is extension ports 1-14 (Extensions 101-114).)
- Use the Page Up and Page Down buttons on the PC keyboard to select the page for the extension(s) to be programmed.

- Use ↓↑→← to highlight the Line Assignment for the Extension. (CO Lines are listed along the top of the display. Extensions are listed along the left side of the display.)
- Press Enter until the appropriate value displays.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Calling & I-Use Indication

CO Line calling is the placement of a telephone call on the Public Switched Telephone Network. CO Line calling includes: dialing local telephone numbers, dialing national long distance telephone numbers and dialing international long distance telephone numbers.

Placing a CO Line call can be done in several ways:

- CO Line Button
- CO Line Group Access Code
- CO Line Group Button
- Speed Dial

When you are using an intercom or CO line the associated lamp will light green and flash at a double wink rate at your telephone. This lamping condition is referred to as I-Use Indication (the indication that you are using this CO Line.) Lamps for the same CO Line that you are using will light steady red at all other DX-80 digital telephones.

Calls placed on CO Lines are checked against the extension COS (Class Of Service). The conditions that can be applied to the associated COS govern the call connection. If the dialed number is denied in the COS check, the call is disconnected. If the Call passes the COS check, the call connection is allowed.

Related Features

CO Line Day/Eve Class Of Service
Extension Day/Eve Class Of Service
CO Line Assignment

Operation

1. Access a CO Line.
2. Press an idle CO Line button.
3. Dial a CO Line Group Access Code (9, 800-806).
4. Press a CO Line Group Button
5. Dial a Speed Dial location that has a stored telephone number.

Conditions

a) If a CO Line is busy when the access attempt is made, busy tone is heard and momentarily the telephone returns to an idle status.

b) Busy CO Lines may be queued for use. (Reference CO Line Queuing.)

Default Setting

All extensions are programmed with CO Line buttons for CO Lines 1~6.
All extensions are allowed to dial all telephone numbers.

CO Line Group

The system provides eight (8) CO Line Groups for assignment of specific CO lines. The CO Line Group assignment is used for CO Line Pool access.

The CO Line Groups are (default) designated by three-digit notation when programmed on Digital extension programmable feature buttons, with the exception of CO Line Group 1, which is default designated a one-digit "9." CO Line Groups 2 through 8 are programmed by dialing 800 through 806.

Related Features

CO Line Alternate Route
Private Line

Related Programming

None

Default Settings

CO Line – CO Group = 1 for all CO Lines. (Range is 1-8.)
System Application – CO Group – Length 1 = 1 (Range is 1-4.)
System Application – CO Group – Leading 1 = 9
(Range is any available, non-conflicting Directory Number.)
System Application – CO Group – Length 2 = 3 (Range is 1-4.)
System Application – CO Group – Leading 2 = 80 (yields 800-806)
(Range is any available, non-conflicting Directory Number.)
System Application – CO Group – Length 3~5 = 3 (Range is 1-4.)
System Application – CO Group – Leading 3~5 = NULL
(Range is any available, non-conflicting Directory Number.)

Programming Abstract

- Program the Lines into the CO Line Groups.
- Reference Flexible Numbering Plan for programming of Directory Numbers for CO Line Groups.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program extensions for CO Line Access. (Index 02-ccc-03, where "ccc" = the CO Line Directory number [740-755]):

- Input 02-ccc-03 to program CO Line "ccc" – Line Group.
- Press [save]. This advances to CO Line Group for CO Line "ccc."

- Press [chg] until the appropriate CO Line Group displays for this CO Line.
- Press the Volume button (up or down) to return to the DB Item Select screen and input another CO Line

Or…

- Press the Hold button to select another CO Line to be programmed.
- Press [show].
- Press [next] twice to advance to the CO Line Group programming for the CO Line selected.
- When finished programming CO Line Groups, press the Volume button (up or down) to return to the DB Item Select screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "CO Line." Then press Enter.
- Use ↓↑→← to highlight "Category 1." Then press Enter. (Notice the display header "CO Line Category 1 : [1/2]." The "[1/2]," indicates that this is the first of two pages for this database programming. Page 1 shows the programmable database items for CO Line ports 1-8 (CO Lines 740-747).)
- Use the Page Up and Page Down buttons on the PC keyboard to select the screen for the CO Line(s) to be programmed.
- Use ↓↑→← to highlight the CO Group assignment for the appropriate CO Line. (CO Lines are listed along the left side of the display.)
- Press Enter to change the data item value.
- Input the appropriate CO Line Group number (1-8) then press Enter to store the data.
- Continue programming other database items as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Group Directory Number Swapping

Directory swapping is provided to further customize directory numbers to specific system resources within resource categories. In this case, the Directory Numbers assigned to CO Line Groups in Flexible Numbering Plans can be adjusted (if required) to meet the individual resource structure needs for the application.

For instance: the Directory Number for CO Line Group 1 is defaulted to "9" and the Directory Number for CO Line Group 2 is defaulted to "800." These two Directory Numbers can be swapped using the Directory Number Swapping utility if the operation is to access CO Line Group 2 using the directory number "9."

Programming Abstract

Use CO Line Group Directory Number Swapping to assign the directory number to a specific CO Line Group.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Enter into CO Line Group Directory Swapping (07-01-01~08-04):

- Input **07-01-0g-04** (where "g" = the CO Line Group number, 1-8).
- Press [show]. The current directory number assigned to this CO Line Group displays.
- Press [show] to swap this directory number with another CO Line group directory number. (9, 800-809).
- Input the directory number that is to be used to access this CO Line Group. (Note: The selected number must be assigned to this system resource in Flexible Numbering Plan.)
- Press [save]. The data is stored.
- Press the Volume button (up or down) to return to the Database Item Select screen or press [next] to enter another CO Line Group number for which the directory number is to be swapped.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "CO Line Application." Then press Enter.
- Use ↓ ↑ → ← to highlight "CO Line Group Directory Number Swapping." Then press Enter. The current CO Line Group numbers and the assigned directory number are displayed.
- Use ↓ ↑ → ← to highlight the appropriate CO Line Group under the column "DIR # Swapping." Then press Enter.
- Input the CO Line Group Directory Number for this CO Line Group.
- Press Enter. The database item is temporarily stored.

- Use ↓ ↑ → ← to highlight the next CO Line Group Directory Number to be changed.
- Repeat the programming process for all CO Line Groups necessary.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Loop Supervision (Talk/Hold Abandon)

CO Line Supervision is a Central Office (Telephone Company) feature. This feature allows for advanced handling of call connections when the distant end party disconnects. This function is especially useful when calls that have been placed on hold go unattended and the distant end party hangs up, or when the caller is connected to voice mail leaving a message and hangs up. The DX-80 receives the disconnect signal from the telephone company and forces the CO line on-hook to release the system resource for other uses.

Related Features

Conference
Conference – Unsupervised
Conference Room
DISA
Call Forward - Extension External Call Forward
Voice Mail - Digital Integration

Related Programming

None

Default Settings

CO Line – Call Abandon set to "Y" (yes) for all CO Lines. (Range: Y/N)
Call Handling – Talk Abandon Time set at 600ms. (Range: 50-1000ms)
Call Handling – Hold Abandon Time set at 600ms. (Range: 50-1000ms)

Programming Abstract

- Program CO Lines as required for non-Loop Supervision mode (Call Abandon = N).
- Program the Call Abandon Times (Talk mode and Hold mode) as required to match the control signals being received from the telephone Company.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program CO Lines for Call Abandon. (02-ccc-09, where "ccc" = the CO Line Directory number [740-755]):

- Input 02-ccc-09 to program "ccc" CO Line – Call Abandon.
- Press [save]. This advances to the selected CO Line Call Abandon setting for CO Line "ccc."
- Press [chg] until the appropriate value (Y/N) displays for this CO Line.
- Press the Volume button (up or down) to return to the DB Item Select screen and input another CO Line.

Or…

- Press the Hold button to select another CO Line to be programmed.
  - Input the CO Line number then press [show].
  - Press [next] to advance through database items until the Call Abandon database item displays.
- When finished programming CO Line Call Abandon, press the Volume button (up or down) to return to the DB Item Select screen.

Or…

- Use [back] or [next] to skip to the appropriate database item.

Program Call Abandon Timers as required, to match CO operation. (03-41 and 03-42):

- At the DB Item Select screen input **03-41** for **Talk Abandon** (Call Abandon during conversation "talk" mode.)

Or…

- **03-42** for **Hold Abandon** (Call Abandon during on hold mode.)
- Press [chg].
- Input the value for this database item. (Accepted entries are 50-1000, in increments of 50 milliseconds.)
- Press [save].
- To select the previous or next database item, press [back] or [next].
- When finished programming Call Abandon database items, press the Volume button (up or down) to return to the DB Item Select screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program CO Lines for Call Abandon:

- Use ↓ ↑ → ← to highlight "CO Line." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter. (Notice the display header "CO Line Category 1 : [1/2]." The "[1/2]," indicates that this is the first of two pages for this database programming. Page 1 shows the programmable database items for CO Line ports 1-8 (CO Lines 740-747).)
- Use the Page Up and Page Down buttons on the PC keyboard to select the screen of Category 1 that show the CO Line(s) to be programmed.

- Use ↓↑→← to highlight Call Abandon for the appropriate CO Line. (CO Lines are listed along the left side of the display.)
- Press Enter until the appropriate value displays.
- Continue programming other database items as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program Call Abandon Timers as required to match the CO operation.

- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight "Category 1" and then press Enter. (Notice the display header "Call Handling – Category 1 : [1/2]." The "[1/2]," indicates that this is the first of two pages for this programming category.)
- Press Page Up or Page Down to select page 2.
- Use ↓↑→← to highlight the database item requiring change (Talk or Hold Abandon Time).
- Press Enter to change the data.
- Input the new data for this database item. (Accepted entries are 50-1000, in increments of 50.)
- Press Enter to temporarily store this data.
- Use ↓↑→← to highlight the next database item to be changed.
- Continue programming other database items as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Name / Label Programming

Naming (or labeling) of CO Lines is provided to customize the appearance of the line identifier in the telephone display when the CO Line is in use. This labeling can assist users when handling CO Line calls by orienting the line to its intended purpose.

Default Settings

System Resource – CO Line Names; CO Lines are named “LINE 1” through “LINE 16” for CO Line directory numbers 740-755 sequentially.

Programming Abstract

Program – CO Lines as required for customized names. (7 characters maximum)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program CO Lines for Customized names. (Index 04-06-ccc, where “ccc” = the CO Line Directory number [740-755]):

- Enter **04-06-ccc** to program “ccc” CO Line name/label for the display.
- Press [save]. This advances to the selected CO Line Name/Label database item and shows the current name/label programmed.
- Press [chg] to input a new name/label.
- Use the dial pad buttons and the table below to input the name/label for the CO Line. (Important: the # button acts as an *enter* key. It must be pressed after each character is input to temporarily store that character in the position. # is also used to enter a space.)
- Press [save] to save the new name/label programming.
- Press [next] to enter another CO Line directory number for programming.
- When finished programming CO Line Name/Labels, press the Volume button (up or down) to return to the DB Item Select screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight “System Resource.” Then press Enter.
- Use ↓ ↑ → ← to highlight “CO Line Names.” Then press Enter. The CO Line directory number (740-755) is listed along the left side of the display. The current name/label programmed is listed adjacent to each directory number.

- Use ↓ ↑ → ← to highlight the CO Line Name to be programmed.
- Press Enter to change the data item value.
- Input the name/label using the PC keyboard.
- Press Enter to temporarily store this data.
- Continue programming other database items as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Programming Copy

This is a programming aid feature. Once one CO Line has been programmed for the configuration settings, those setting can be copied to other CO Lines using this utility.

Related Features

None

Related Programming

System Application - CO Line Copy

Default Settings

N/A

Programming Abstract

Use the CO Line Programming Copy function to copy the programming of one CO Line to another or from one CO Line to many others.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Copy CO Line(s) via Individual (one at a time) programming method. (08-11-01):

- Input 08-11-01.
- Press [save]. This advances to the Individual CO Line Copy screen.
- Press [show]. The system prompts for the CO Line that should be copied; "COPY FROM."
- Input the CO Line directory number of the CO Line that has been programmed for copying to other CO Lines.
- Press [save]. The system prompts for the first CO Line directory number where the source data is to be copied; "COPY TO."
- Input the CO Line directory number (740-755) where the copy data should be stored.
- Press [save]. The system prompts for the next directory number where the source data is to be copied; "COPY TO" again.
- Continue inputting CO Line directory numbers for those CO Lines where the copy data should be stored.
- Press [save] for each input directory number.
- When finished programming CO Lines via the Individual Copy function, press the Volume button (up or down) to return to the DB Item Select screen.

Or…

- Press the Hold button to return to the previous database menu. Then use [back] or [next] to skip to the appropriate database item.

Copy CO Line(s) via Group (many at a time) programming method. (08-11-02):

- Input 08-11-02.
- Press [save]. This advances to the Group CO Line Copy screen.
- Press [show]. The system prompts for the CO Line that should be copied; "COPY FROM."
- Input the CO Line directory number of the CO Line that has been programmed for copying to other CO Lines.
- Press [save]. The system prompts for the CO Line Group directory number where the source data is to be copied; "COPY TO."
- Input the CO Line Group directory number (9, 800-806) where the copy data should be stored.
- Press [save]. The copy data is stored in all CO Lines that are part of that CO Line Group. At this time the system prompts for the next CO Line Group directory number where the source data is to be copied; "COPY TO" again.
- Continue inputting CO Line Group directory numbers where the copy data should be stored.
- Press [save] for each input directory number.
- When finished programming CO Lines via the Group Copy function, press (volume up or down) to return to the DB Item Select screen. Or… press HOLD to return to the previous database menu. Then use [back] or [next] to skip to the appropriate database item.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

- Use ↓↑→← to highlight “System Application.” Then press Enter.
- Use ↓↑→← to highlight “CO Line Copy.” Then press Enter. The CO Copy menu displays.

Copy CO Line(s) via Individual (one at a time) programming method:

- Use ↓↑→← to highlight “Individual.” Then press Enter. The cursor is immediately positioned on the Source CO Line Directory number input.
- Input the CO Line directory number of the CO Line that has been programmed for copying to other CO Lines.
- Press Enter. The cursor immediately moves to the Destination Directory number input area.
- Input the CO Line directory number (740-755) where the copy data should be stored.
- Press Enter. The cursor moves to the next input position allowing entry of the next CO Line Directory Number. The previous entry remains displayed.
- Continue inputting CO Line directory numbers for those CO Lines where the copy data should be stored, pressing Enter after each input directory number.
- When all CO Lines to be copied with the copy data have been input press the ESC (escape). At this time it is possible to input another “Source” CO Line directory number and continue the process for another CO Line(s).

Copy CO Line(s) via Group (many at a time) programming method:

- Use ↓↑→← to highlight “Group.” Then press Enter. The cursor is immediately positioned on the Source CO Line Directory number input.
- Input the CO Line directory number of the CO Line that has been programmed for copying to other CO Lines.
- Press Enter. The cursor immediately moves to the Destination Directory number input area.
- Input the CO Line Group directory number (9, 800-806) where the copy data should be stored.
- Press Enter. The cursor moves to the next input position allowing entry of the next CO Line Group directory number. The previous entry remains displayed.
- Continue inputting CO Line Group directory numbers for those CO Lines where the copy data should be stored, pressing Enter after each input directory number.
- When all CO Lines to be copied with the copy data have been input press the ESC (escape). At this time it is possible to input another “Source” CO Line directory number and continue the process for another group of CO Line(s).

- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: “Exit This Feature”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Queuing / Callback [cbck]

CO Line Queuing allows a user to request use of a busy CO line. When the CO Line goes idle (current user hangs up), that CO Line rings the user that queued the line. While the line is ringing at the extension, it is unavailable for access by other users. If the extension that queued the CO Line does not respond to the queue callback within 8 seconds, the queue is cancelled and the line becomes available for other users.

Related Features

CO Line Groups

Related Programming

CO Line – CO Group
Extension – Line Assignment

Operation – Queue

1. Press a CO Line that is busy or dial access to a CO Line Group (9, 800-806).

   The display shows:

   ```
   CO LN BUSY  XXX
   cbck
   ```

2. Press [**cbck**]. The display shows: CBCK TO LINE XX momentarily and then goes idle.

Operation – Queue Callback Answer

1. When the CO Line queued becomes idle, it will Callback ring the extension. The display shows:

   ```
   CBCK TO LINE XX
        reply del
   ```

2. The user may lift the handset, press the ON/OFF button to activate speakerphone or press [**reply**] to answer the Queue Callback.

Conditions

An extension must have access to a CO Line via Line Assignment to Queue a CO Line.

Default Settings

N/A

Programming Abstract

No Programming is required for CO Line Queuing.

CO Line Receive Assignment

CO Line Receive Assignment is the DX-80 system utility used to allow an extension to answer ringing CO Lines. The DX-80 system allows the Receive Assignment of CO Lines to extensions in a matrix fashion such that complete flexibility is possible. Each CO Line may be assigned individually as a Receive Assigned – Yes or No.

When ringing occurs on a CO Line that is Receive Assigned – No; the LED for the CO Line lights busy while the line is ringing.

Related Features

Tenant Group
CO Line Group
CO Line Private Line

Related Programming

Extension – Receive Assignment
CO Line – Tenant Group, CO Line Group, Private To

Conditions

Receive Assignment does not inhibit a user from accessing a CO Line for out-calling.

Default Settings

All DX-80 extensions are Receive Assigned – Yes to all CO Lines.

Programming Abstract

Program the required extensions for Receive Assigned – No per CO Line.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program extensions for the ability to Receive (answer) CO Lines while ringing. (01-xxx-24-cc):

- Input **01-xxx-24-cc** (where "xxx" = extension to be programmed and "cc" = CO Line number {01-16} to be programmed).
- Press [save]. This advances to the Receive Assignment for the extension and specific CO Line selected.
- Press [chg] until the appropriate value displays. (Y/N)
- Press [back or [next] to go to the previous or advance to the next CO Line to program for this extension.

Or…

- Press the Volume button (up or down) to return to the DB Item Select screen and input the next extension/CO Line to program.
- When all changes are complete, press the Volume button (up or down) to return to the DB Item Select screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Extension." Then press Enter.
- Use ↓ ↑ → ← to highlight "Receive Assignment." Then press Enter.
- Use ↓ ↑ → ← and Page Up Page Down to highlight the extension and CO Line to change.
- Press Enter until the appropriate data displays. (Y/N)
- Use ↓ ↑ → ← and Page Up Page Down to highlight the next extension/CO Line to change.

- Continue this process for all extensions/CO Lines to change.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Ring Assignment (Answer Position)

Ring Assignments determine the extensions and other system resources that will be designated to ring on each CO Line. Ringing assignments may be to UCD Groups, Virtual Numbers or to Extensions. Each CO Line has six assignments for ringing in the Day mode, one assignment for ringing in the Evening mode and one assignment for No Answer – Predefined Call Forward.

Related Features

CO Line Signaling
Do Not Disturb
Call Forward - Station
Call Forward - Predefined
Auxiliary Lamp

Related Programming

System Application – Time Switching
Extension – Receive Assignment
CO Line – Answering Position
Call Handling – Predefined Forward Time

Conditions

Ringing more than six extensions is accomplished by assigning ringing to a UCD Group, then assigning the appropriate extensions into that UCD Group and setting the UCD Group Hunting Method at All Ring.

Default Settings

All CO Lines are assigned to ring at extension 101 (default attendant position) in the Day and Evening modes of operation.

No Predefined Call Forward destination is assigned for any CO Line (see Call Forward – CO Line Predefined.)

Programming Abstract

- Program CO Lines for ringing as required.
  (Ringing may be assigned to extensions, Hunt Groups or to Virtual Numbers.)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program CO Lines for Day Ringing Assignment (02-ccc-13-01-01):

- Input **02-ccc-13-01-01** (where "ccc" = the CO Line directory number 740-755 to be programmed). The first of six Members (ringing destinations) displays.
- Press [save].
- Press [chg] to change this member.

Or...

- Press [next] to select the next programmable member for ringing assignment.
- When the Member for change displays, press [chg].
- Input the directory number where Day mode ringing for this CO line is necessary. (Extensions: 101-156; Hunt Groups: 410-433; Virtual Numbers 700-729.)
- Press [save]. The data is stored.
- To program other Members press [next] or [back] to select the Member to change and repeat the process.
- Continue making other programming changes or exit the programming mode.

Program CO Lines for the Evening Ring Assignment (02-ccc-13-02):

- Input **02-ccc-13-02** (where "ccc" = the CO Line directory number 740-755 to be programmed). The first of six possible Members (destinations) displays.
- Press [chg] to change the Evening assignment.
- Input the directory number where Evening mode ringing for this CO line is necessary. (Extensions: 101-156; Hunt Groups: 410-433; Virtual Numbers 700-729.)
- Press [save]. The data is stored.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "CO Line." Then press Enter.
- Use ↓ ↑ → ← to highlight "Answering Position." Then press Enter.
- Use ↓ ↑ → ← to highlight the Day Member or Evening ringing destination for the CO Line (CO Line numbers are listed vertically along the left side of the screen). Then press Enter.

- Input the CO Line, Hunt Group or Virtual Number directory number where ringing for this CO Line is to be assigned.
- Press Enter. The database item is temporarily stored.
- Use ↓ ↑ → ← to highlight the next ringing destination to be programmed.
- Repeat the programming process for all CO Lines and destinations for the mode (Day/Evening).
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Ring Type Assignment

The DX-80 system provides eight types of ringing for indication of specific CO Line ringing. Any CO Line may be allocated one of the available Ring Types. When this feature is used, the specific ring type assigned to the CO Line is the ring type heard when that CO Line rings. This feature is helpful when CO Lines are arranged into groups for specific call handling. The Ring Type indication helps to identify the CO Line and the group to which it belongs.

Related Features

Extension – Ring Type

CO Line Ring Assignment

Related Programming

CO Line – CO Line Ring Type

Conditions

a) CO Line Ring Type overrides Extension Ring Type settings.
b) When a CO Line Ring Type is set to "0," the Extension Ring Type is used.

Default Settings

All CO Lines are assigned Ring Type 0. (Range is 0-8.)

Programming Abstract

Program CO Lines for the Ring Type.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)

- Press [show]. The DB Item Select screen displays.
- Input **02-740~755-11** (740~755 = the CO Line directory number).
- Press [chg] until the appropriate Ring Type displays.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "CO Line." Then press Enter.
- Use ↓↑→← to highlight "Category 2." Then press Enter.
- Use ↓↑→← to highlight the Ring Type for the CO Line.
- Press Enter until the appropriate Ring Type displays.
- Use ↓↑→← to highlight the next CO Line Ring Type to be changed.
- Repeat the programming process for all CO Lines.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Ringing Modes

FEATURE 6 MNO 3 DEF

The DX-80 system has several ringing modes to allow flexible ringing patterns depending office conditions. The ringing modes available are: DAY, EVEning, ALTernate, and TIME. The DAY and EVE modes can be programmed for ringing assignments as required in these two operational conditions. Details for each mode are listed below.

DAY: This is the ringing pattern for CO Line ringing assignments while the system is in DAY mode.

EVE: This is the ringing pattern for CO Line ringing assignments while the system is in EVE (evening) mode.

TIME: This is a scheduled time clock that automatically adjusts the mode of system operation from DAY mode to EVE mode based upon preprogrammed settings.

ALT: The Alternate mode is specific to use with the optional AAM (Automated Attendant Module). This mode re-directs callers who have dialed 0 (zero) at the auto-attendant prompt to a temporary (alternate) destination. This is typically used for primary attendant break periods, etc.

Related Features

Class of Service – Extension
Class of Service – System
Automatic CO Line Ringing Modes
Night Service Activate (F63)
Tenant Groups

Related Programming

CO Line – Answering Position – Day, Eve assignments.
System Application – Time Switching

Operation – at the Attendant Extension

1. While the attendant extension is idle, press the Ringing Mode feature access code FEATURE 6 MNO 3 DEF. The system prompts for the Extension password.
2. Input the password (default 9999). The mode of operation is then advanced sequentially.
3. Repeat the process to continue the advance of modes.

Operation – at Any Digital Extension Using the Attendant Password

1. While the extension is idle, press the Attendant Administration code FEATURE # 0 OPER. The system prompts for the Tenant Group to enter.
2. Input the Tenant Group (typically "1") and then press [save]. The system then prompts for the Attendant Extension password.
3. Input the password (default for Tenant 1 is "9999"), then press [show]. The system shows SVC MODE CHANGE in the display.
4. Press [show]. The current mode of operation displays.
5. Press [chg] until the appropriate mode displays.
6. Lift and replace the handset or press the ON/OFF button twice to exit Attendant Administration.

Conditions

a) This function can only be operated at the attendant extension.
b) The feature access code can be assigned to an available Flexible Feature Button at the attendant extension with the Attendant Extension Password to allow one button operation. FEATURE 6 MNO 3 DEF + 9 WXYZ 9 WXYZ 9 WXYZ 9 WXYZ.
c) The display of all digital telephones will indicate the current Ringing Mode of operation. The prompts EVE and ALT above the center LCD Interactive button indicate these active modes. The DAY mode is indicated by the absence of the other indicators.

Default Settings

CO Line – Answering Position – Day and Eve = 101.
(Range is 101~156, 410~433, 700~729.)
System Application – Time Switching (See Automatic CO Line Ringing Modes.)

Programming Abstract

Program each CO Line for the ringing position(s) (Answering Positions) required.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Day Mode Answering Positions (02-740~755-13-01-01):

- Input 02-ccc-13-01-01 ("ccc" is the CO Line directory number), then press [save]. The Day mode Member 1 Answering Position displays.
- To change this member press [chg].

Or…

- To advance to the nest member press [next].
- Press [chg] to change the stored member (ringing/answering position).
- Input the directory number for the ringing position (extension, 101-156; UCD, 410-433; or Virtual number, 700-730.)
- Press [save] to store this data.
- Continue making other changes or exit programming.

Program Eve Mode Answering Position (02-740~755-13-02):

- Input 02-ccc-13-02 ("ccc" is the CO Line directory number), then press [save]. The Eve mode Answering Position displays.
- Press [chg] to change the stored answering position (ringing/answering position).
- Input the directory number for the ringing position (extension, 101-156; UCD, 410-433; or Virtual number, 700-730.)
- Press [save] to store this data.
- Continue making other changes or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "CO Line." Then press Enter.
- Use ↓ ↑ → ← to highlight "Answering Position." Then press Enter.
- Use ↓ ↑ → ← to highlight the Day Member or Eve answering position. Then press Enter.
- Input the directory number for the ringing position (extension, 101-156; UCD, 410-433; or Virtual number, 700-730.)
- Press Enter to store this data.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.

- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Signaling / Dialing Type (Tone/Pulse)

CO Lines may be designated as Pulse Dial or DTMF (Touch Tone®) Dial types. This setting will determine how telephone number dialing is delivered to the telephone company.

Related Features

Pulse to DTMF Conversion

Operation

Dialing is delivered according the programming of each CO line while a user dials the telephone number.

Conditions

A CO Line that is marked as Dialing Type "Pulse" can be temporarily forced to Tone mode for use with automated answering devices etc. using the Pulse to DTMF Conversion feature *TONE.

Default Settings

All CO Lines are assigned to signal in DTMF (Tone) mode.

Programming Abstract

Program CO Lines for Pulse dialing or Tone (DTMF) dialing as required.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # *TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 02-ccc-07 (where "ccc" = the CO Line directory number to be programmed).
- Press [chg] to select Tone or Pulse dialing mode.
- Press the Volume button (up or down) to return to the DB Item Select screen to input a new CO Line number.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.

- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "CO Line." Then press Enter.
- Use ↓↑→← to highlight "Category 1." Then press Enter.
- Use ↓↑→← and Page Up Page Down to select CO Lines 1-8 or 9-16.
- Use ↓↑→← to highlight the appropriate CO Line - Dialing mode.
- Press Enter until the appropriate value displays.
- Use ↓↑→← to highlight the next CO Line Dialing mode to change.
- Repeat the programming process for all CO Lines.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

CO Line Type Assignment

Each CO line can be assigned as "PBX," "CO Line," "EMPTY," "CO DEV," or "PAGE." These designations provide for the following possible CO Line circuit connections:

CO: CO type CO Line circuits are standard interface CO Lines that require no special handling for advanced system features.

PBX: PBX Line type invokes system automatic operations for handling of PBX ports. When a programmed PBX Trunk access code is dialed, the system is alerted that the user is accessing a telephone company facility to make a network call. When this occurs, the system monitors digits dialed after the PBX access code and compares them against the Allowed Digit Interval table in that station's Class of Service. The programmed PBX Trunk access code also notifies the system that a pause should be inserted when re-dialing telephone numbers dialed on that CO line beginning with the PBX access code. This operation applies for Speed Dial, Last Number Redial, Saved Number Redial, Memo Pad, and Automatic Redial.

EMPTY: Assignment reserved for CO lines equipped on the system, but not connected to telephone company, network facilities. The EMPTY type eliminates the CO Line from access by system features that automatically access CO Line resources.

CO DEV: CO DEV type is provided to mark a CO Line circuit as being connected to special apparatus. This type effectively removes the CO Line circuit from automatic access by system features while maintaining its direct accessibility for the specific purpose of its connection. (Typical use would include connection of ancillary analog intercom calling device.)

PAGE: PAGE type is provided to mark a CO Line circuit as being connected to special apparatus. This type effectively removes the CO Line circuit from automatic access by system features while maintaining its direct

accessibility for the specific purpose of its connection. (Typical use would include connection of ancillary paging equipment.)

Related Features

Class of Service – Station
External Paging

Related Programming

CO Line - CO Line Type
Extension - Class of Service
Restriction - Toll Restriction

Default Settings

At default CO Line Type is set to "CO" for all CO Lines.

Programming Abstract

Program CO Line Type for each CO Line circuit according to its use requirement.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **02-740~755-08** then press [save]. The CO Line Type displays for the CO Line selected.
- Press [chg] until the appropriate CO Line Type displays.
- Press the Volume button (up or down) to return to the DB Item Select screen and another CO Line number for programming or exit the program mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "CO Line." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use ↓ ↑ → ← and Page Up Page Down to highlight the CO Line Type for the CO Line to be changed.
- Press until the Enter appropriate value displays.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.

- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Conference, Meet Me

3 DEF 9 WXYZ 0 OPER ~ 3 DEF 9 WXYZ 7 PQRS

Conference is used join telephone connections together. Meet Me Conference simplifies the setup process by assigning designated system resources as conference destinations. The result is eight separate conference locations that are joined by dialing the location number. Callers can easily be transferred to these locations. Users may simply dial the location number. Outside parties can join the conference via the automated attendant simply by dialing the location number at the auto attendant greeting.

A programmable Conference Tone may be enabled or disabled so that entry into a conference is indicated with an alert tone or entered into without an alert tone.

Related Features

Conference Supervised/Unsupervised

Related Programming

CO Line – Call Abandon
Call Handling – CO Line Conference
Call Handling – Talk Abandon Time
Call Handling – Meet Me Conference Talk Time
Call Handling – Conference Tone
System Application – Meet Me Conference Directory Number

Operation – Transfer a Caller to a Meet Me Conference

1. While connected to another extension or CO Line, press the Transfer button.
2. Dial the Meet Me Conference location where this party is to be connected (390-397).
3. Hang up to complete the transfer.

Analog Ports (Single Line Telephones)

1. While connected to another extension or CO Line, momentarily press the hook-switch (or press the FLASH button).
2. Wait for dial tone; then dial the Meet Me Conference (390-397)
3. Hang up to complete the transfer.

Operation – Join a Meet Me Conference

1. Dial the Meet Me Conference location that you wish to join (390-397).
2. Hang up when finished.

Operation – Join a Meet Me Conference from the Auto Attendant

1. When answered by the DX-80 system automated attendant, dial the Meet Me Conference location that you wish to join (390-397).
2. Hang up when finished.

Conditions

a) It is highly recommended that the all CO Lines be set at the factory default for Call Abandon ("Y") to optimize Meet Me Conference functionality.
b) When Call Abandon is set to "N" for any CO Line, you must set the Meet Me Conference Talk Time to some value other than 0. This is the only facility that will allow the CO Line to be disconnected if Call Abandon is No.
c) Up to four simultaneous connections may join any one conference.
d) Up to eight simultaneous conferences may be established at any one time.

Default Settings

Call Handling – Meet Me Conference Talk Time is set at 0 (unlimited).
(Range is: 0-120 minutes, in 10-minute increments.)
Call Handling – Conference Tone is set to "Y" (yes). (Range is: Y/N.)
Call Handling – CO Line Conference = 3 Lines. (Range is None/2/3.)

Programming Abstract

- See "System Application – Meet Me Conference" for Directory Number programming
- See "CO Line Loop Supervision" for CO Line – Call Abandon programming
- See "CO Line Loop Supervision" for Call Handling – Talk Abandon Time
- Program Call Handling – CO Line Conference for none/2/3 lines.
- Program Call Handling – Meet Me Conference Talk Time to limit conference time for CO Lines involved in conference calls. (Required when Call Abandon is "N" for any CO Line.)
- Program the Call Handling – Conference Tone for Yes/No operation.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program the Meet Me Conference Time. (03-37):

- Input **03-37**. Then press [save].
- Press [chg] until the Meet Me Conference Time displays.
- Continue making other programming changes or exit the programming mode.

Program the Conference Tone Operation. (03-23):

- Press the Volume button (up or down) to return to the DB Item Select screen.
- Input **03-23**. Then press [save].
- Press [chg] until the appropriate Conference Tone operation displays (Y/N).
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.

- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Call Handling." Then press Enter.

Program the Meet Me Conference Time:

- Use ↓ ↑ → ← to highlight "Category 2." Then press Enter. The CO Line – Category 2 screen displays.
- Use ↓ ↑ → ← to highlight the database item Meet Me Conference Talk Time.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- The main Call Handling screen is again visible.

Program the Conference Tone Operation:

- Use ↓ ↑ → ← to highlight "Category 3." Then press Enter.
- Use ↓ ↑ → ← to highlight "Conference Tone."
- Press Enter until the appropriate value displays. (Y/N)
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Conference, Supervised/Unsupervised

FEATURE 7PQRS 7PQRS

The system can accommodate eight (8), 4 member (party) conferences, simultaneously. Conference combinations may consist of 3 CO lines maximum and any number of extensions to a maximum of 4 parties (members). One inside key telephone station is the controller of the conference and constitutes one conference member. Before a conference can be established with a maximum of 4 members, a 3-member conference must first be established.

Supervised/Unsupervised

A supervised Conference is a conference in which at least one member is an extension of the DX-80 system. The DX-80 extension that establishes a conference is the conference controller and may add and/or delete members of the conference at any time. The conference controller also has the privilege of establishing an Unsupervised Conference.

An Unsupervised Conference is a conference in which only CO lines are members. All members are therefore outside of the premises and connected together using the DX-80 conference resource. An unsupervised conference may be re-joined by the initiating DX-80 extension however, since that extension maintains control of the conference even though it is unsupervised.

Related Features

Hold
Conference Room
CO Line Loop Supervision
Private Talk (F57)
Forced Release (F74)

Related Programming

Call Handling - CO Line Conference, Unsupervised Talk Time, Conference Tone
CO Line – Call Abandon

Operation – Establish a Three-Party Conference

1. Answer or place the first call connection (internal or external) that will become part of the conference.
2. Press the Hold button.
3. Place the second call (internal or external).
4. Press the Conference button. The connections are joined together.
5. Hang up to end the Conference.

Analog Ports (Single Line Telephones)

1. While on a call, press {FLASH} (hook-switch flash).
2. Make a second call.
3. Press {FLASH} (hook-switch flash) and then dial 3 DEF.

Operation – Establish a Four-Party Conference

1. First establish a three-party conference (per above).
2. Press the Hold button.
3. Place the third call (internal or external).
4. Press the Conference button. The connections are joined together.
   (Four parties include the initiator {Controller} of the conference.)
5. Hang up to end the Conference.

Operation – Establish an Unsupervised Conference

1. First establish a conference (per above) with two or three CO Lines.
2. Press FEATURE 7 PQRS 7 PQRS.
3. The Unsupervised Conference is established and your extension is returned to idle.

Operation – Rejoin an Unsupervised Conference

1. Press FEATURE 7 PQRS 7 PQRS.
2. Your extension is rejoined to the conference connection.

Operation – Forcedly Release a Conference Member (Conference Controller Only)

1. While engaged in a conference the display shows:

   XXX XXX XXX
   private forced

2. Press [**forced**]

   PRESS DIR#
   exit

3. Press [**exit**] to abort the operation and return to the conference.

Or…

Dial the directory number (CO Line number or Extension number) to release. (You may also simply press the CO Line button or DSS button of the CO Line/extension to be released.)

That conference member is disconnected and you are rejoined in conference with the remaining members.

4. Hang up to end the Conference.

Operation – Private Connection with a Conference Member (Conference Controller Only)

1. While engaged in a conference the display shows:

   XXX XXX XXX
   private forced

2. Press [**private**]

   PRESS DIR#
   exit

3. Press [**exit**] to abort the operation and return to the conference.

Or…

Dial the directory number (CO Line number or Extension number) to connect. (You may also simply press the CO Line button or DSS button of the CO Line/extension to be connected.)

That conference party is removed from the conference and connected to you.

4. You may re-establish the conference with all members by pressing the Conference button.

Or…

Hang up on the current connection and rejoin the remaining member(s) by pressing the Hold button.

Hang up to end the conference/connection.

Conditions

a) The extension that establishes a conference is called the controlling party.
b) Only the conference controller can add a new conference connection (party).
c) Only the controlling party is allowed to invite or forcibly release any attending internal or external party, or to setup a “private talk” with any one attending party.
d) When adding new parties to a conference and while speaking privately to a particular conference member other members of the conference will be connected to Music On Hold.
e) Each of the calls involved in a holding conference will be placed on Exclusive Hold.
f) When the controlling party exits a conference, the most recently invited internal party will be designated as the new controlling party.
g) When a conference is established, each party will hear a burst of conference tone when the Conference Tone is enabled.

h) The Unsupervised Conference feature code FEATURE 7 PQRS 7 PQRS may be programmed on any available programmable feature button.

i) Only the Controller of an Unsupervised Conference may rejoin an Unsupervised Conference.

j) Conference can only be established at a Digital Speakerphone.

Default Settings

Call Handling – CO Line Conference = 3 CO Lines. (Range is None/2/3.)
Call Handling – Unsupervised Talk Time = 0 (unlimited). (Range is 0-120 in 10-minute increments.)
Call Handling – Conference Tone = Y. (Range is Y/N.)
CO Line – Call Abandon = Y. (Range is Y/N.)

Programming Abstract

- Program the maximum CO Lines that may be in a conference (none, 2 or 3).
- Program the time allowed for Unsupervised Conferences (CO Line-to-CO Line).
- Program the Conference Tone for Yes or No operation.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program the maximum number of CO Lines that may be in a conference. (03-01):

- Input **03-01**.
- Press [chg] until the appropriate value displays (NO/2LNS/3LNS).
- Continue making other programming changes or exit the programming mode.

Program the Unsupervised Conference Time. (03-38):

- At DB Item Select screen input **03-38**
- Press [chg] until the Unsupervised Conference Time displays.
- Continue making other programming changes or exit the programming mode.

Program the Conference Tone Operation. (03-23):

- At DB Item Select screen Input **03-23**. Then press [save].
- Press [chg] until the appropriate Conference Tone operation displays (Y/N).
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

- Use ↓↑→← to highlight "Call Handling." Then press Enter.

Program the maximum number of CO Lines that may be in a Conference:

- Use ↓↑→← to highlight "Category 1." Then press Enter. The CO Line – Category 1 "[1/2]" screen displays.
- Use ↓↑→← to highlight the database item CO Line Conference.
- Press Enter. Each time that enter is pressed the value of this database item is updated.

Unsupervised Conference Time:

- Press the Page Up or Page Down button to select the second page of Category 1. "[2/2]"
- Use the cursor arrows to highlight "Unsupervised Talk Time."
- Press Enter until the appropriate Unsupervised Talk Time displays.

- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation. The main Call Handling screen is again visible.

Program the Conference Tone Operation:

- Use ↓↑→← to highlight "Category 3." Then press Enter.
- Use ↓↑→← to highlight "Conference Tone." Then press Enter.
- Press Enter until the appropriate value displays. (Y/N)
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Database Administration – Via PC-DBA

The DX-80 system allows the installer/technician to administer system database parameters via an IBM® Compatible, Personal Computer. The use of a PC has distinct advantages over programming the system via the digital telephone, including: specific database archiving (via save function), remote programming, outboard programming (program the

system template into the PC memory then send it to the DX-80 when ready). The PC program that interfaces with the DX-80 system is PC-DBA (PC-Database Administration).

PC-DBA requires the following resources in the PC environment:

- PC running DOS (PC-DBA can be run in a DOS Window but performance can be impacted by other Windows® modules. We do not warranty or guarantee any level of performance in the Windows environment.)
- 640k minimum RAM
- 386 minimum microprocessor
- 2 megabytes minimum space on the hard disk

Important Notice: PC-DBA is available via the Comdial Web page at www.comdial.com. This software is not available by any other means. Use of this DX-80 utility requires a well-rounded understanding of the PC environment and the DOS file structure. The manufacturer and/or supplier of PC-DBA cannot support users who are unfamiliar with these basic requirements. If any of these issues concern you, please use Database Administration via Any Digital Extension.

Loading PC-DBA software:

When PC-DBA is retrieved from the hosted Web site it is downloaded in an archived format to expedite the process. It is recommended that you take the following actions when deploying PC-DBA:

1. Create a directory on the PC where PC-DBA can be loaded. (Typically "DX-80.") (This becomes known as the "working directory.")
2. Copy the archive file into that directory and then executive the un-archive process.

Whenever PC-DBA is to be used, start the computer and open the PC-DBA directory. To start PC-DBA, at the DOS prompt, type: [**DX-80**] (excluding the "[]" brackets.) Then press Enter.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

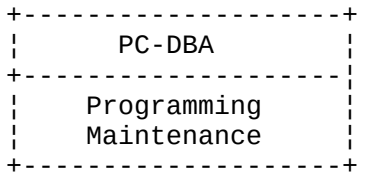
- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter. At this time the title page displays as below:

```
+------------------------------+
|        DX-80 PC-DBA          |
|------------------------------|
|      (C) Copyright 2000      |
|      All Rights Reserved     |
|                              |
|                              |
|        Ver. : R16UM0.F19     |
+-------- Press Any Key -------+
```

- Press any key (as requested). The Main screen is then displayed with the cursor positioned on "PC-DBA."

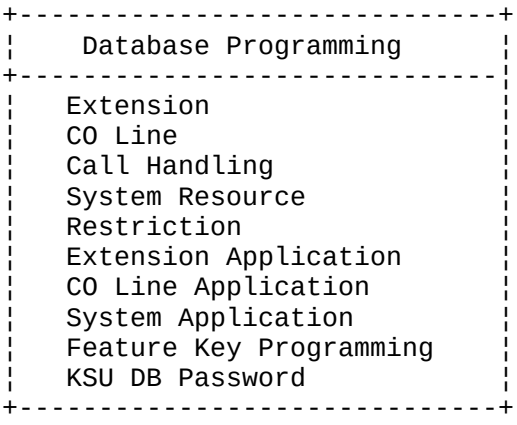
```
+--------------------+
|       Main         |
+--------------------+
|  PC-DBA            |
|  Database Save     |
|  Database Restore  |
|  Exit to DOS       |
+--------------------+
```

- Press Enter to enter into the Programming and Maintenance functions of PC-DBA. The PC-DBA screen is now shown with the cursor positioned on “Programming.”



- Press Enter to enter into the Database Programming screen. The Database Programming screen displays with the cursor positioned on “Extension.” All of the various programming parameters of the system are accessed from this main screen.
- During all PC-DBA programming operations, changes to the DX-80 database are stored in the *working directory* **not** in the DX-80 system memory.

Note: Data in the *working directory* is only updated to the DX-80 system via the PC-DBA – SEND operation.



- Use ↓ ↑ → ← to highlight the category of your choice then press Enter to open that category and begin programming database parameters as required.
- Use ↓ ↑ → ← to highlight the various menu levels and database parameters. Then press Enter to open that level/parameter.
- There are many menu levels within Database Programming. It is often necessary to use Page Up and Page Down to view all elements of some categories.
- Use Esc to exit one category and return to the previous level.
- When all changes in a category have been made press the Esc (escape) key to exit that database programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to move up through the menu levels.
- You may continue making other programming changes,

Or…

- Exit PC-DBA programming, to do so:
  - Continue pressing Esc (escape) until the “Main” menu is again in view.
  - Use ↓ ↑ → ← to highlight “Exit to DOS.” Then press Enter.

Note: Changes made via PC-DBA are stored in the *working directory* and not updated to the DX-80 system memory until a "SEND" function has been performed.

- Use the information found with each feature description for specific details on programming the various features.

Database Save and Restore:

The *working directory* is the location allocated in the PC for all changes while the PC-DBA programming session is in progress. It is often desirable to save the data in this directory for later retrieval since work on many various databases may be required.

Important Note: Always use Database Save prior to Database Restore if you intend to preserve the current contents of the *working directory*.

Database Save:

- Go to the Main screen as seen below.

```
+--------------------+
|       Main         |
+--------------------+
|  PC-DBA            |
|  Database Save     |
|  Database Restore  |
|  Exit to DOS       |
+--------------------+
```

- Use ↓ ↑ → ← to highlight the "Database Save" then press Enter. The following window displays to confirm your intended save operation:

```
+-------------------------------------------------------------+
|                                                             |
|          Do you want to backup data files ? (Y/N)           |
|                                                             |
|                                                             |
+-------------------------------------------------------------+
```

- Press Y. The following user input is requested:

```
+-------------------------------------------------------------+
|                                                             |
|          Do you want to backup data files ? (Y/N)           |
|Backup to : C:\DX-80                                         |
|                                                             |
+-------------------------------------------------------------+
```

- Input a new directory (DOS file system directory) where these files are to be stored. It is also possible to specify the "A" drive if files are to be stored on a floppy disk. Regardless of where the files are to be stored, remember the location so that they can be retrieved at the appropriate time.
- When the drive/directory name has been input press Enter. If it is a new directory the following alert displays:

```
Directory Not Exist ! Create it ? (Y/N)
```

- Press Y. The files are copied to the location specified and the following message displays to confirm the procedure:

```
Backup Completed , Press Any Key To Exit
```

- Press any key. The save function is complete.

Database Restore:

- Go to the Main screen as seen below.

```
+--------------------+
|       Main         |
+--------------------+
|  PC-DBA            |
|  Database Save     |
|  Database Restore  |
|  Exit to DOS       |
+--------------------+
```

- Use ↓ ↑ → ← to highlight the "Database Restore" then press Enter. The following window displays to confirm your intended restore operation and to request the input, from where the files will be restored:

```
+------------------------------------------------------------+
|                                                            |
|                    Data File Directory :                   |
|        C:\DX-80-DBA                                        |
|                                                            |
+------------------------------------------------------------+
```

- Input the directory/drive data and press Y. The following confirmation is requested:

```
+------------------------------------------------------------+
|                                                            |
|                                                            |
|         Replace Files In Current Directory ? (Y/N)         |
|                                                            |
+------------------------------------------------------------+
```

- When a Database Restore operation is performed the files from the selected directory or floppy disk will be copied into the *working directory*, overwriting the current files in the directory. It is imperative that this operation be performed with the confidence that the files in this *working directory* are not needed because they cannot be retrieved without specific retrieval steps that require DOS operations outside of the PC-DBA program environment.
- Press Y. The files are copied into the *working directory*. When complete the following screen displays:

```
Copy Complete, Old Data Files Are Renamed to '.BAK'
                    Press Any Key To Exit
```

- Press any key. The restored files are now available for editing.
- Enter into Database Programming to edit as required.

PC-DBA Control Menu

- At the bottom of the PC-DBA screen, special control functions of PC-DBA are shown. The following line/bar can be found at the bottom of the display:

```
F1-Help F2-Unsave F3-RCV F4-SND F5-Cnt F6-Disc F7-Prn F8-Init F9-Mdm F10-
                                                        RS232C
```

- Use the associated "F" (Function) keys on the PC keyboard to access the various operations. The functions and their specific operation is detailed in the text below.

F1 – Help

- Press F1 to view the keystroke help menu of PC-DBA. There are two help screens.

F2 – A-Save/U-Save

- Press F2 to select Auto-Save or U-Save (You-Save). This selection determines how PC-DBA will save data during the programming process. The current mode of operation displays.
- If U-Save is selected, PC-DBA prompts the user to confirm the save operations. During the save process, changed data is written over existing data files to store the changed data. For this reason the user must be confident that previous data values are no longer required. Once the new data is written, the old data is lost. (See Database Save for instructions on how to save old data.)

- If A-Save is selected, PC-DBA will automatically save data upon exit from the programming screen where work has been done. This option saves time and keystrokes but leaves no margin for recovery since data is immediately written to data files when the screen is exited.

F3 – Receive

- Before data can be exchanged between the PC and the DX-80 system, a connection must be made between the two devices. This connection is a serial (RS-232 – COM Port or Modem) link. While on-site the PC may be connected to the DX-80 via a standard RS-232C "straight-through" cable. When accessing the system remotely this connection can be made via a modem.

Cable

- Connection to the DX-80 system on site is accomplished via the PC serial port (COM Port). Use a straight-through 9-pin to 9-pin cable from the PC serial port to the DX-80 CPM – PC-DBA Port. Once this connection is made, it is possible to connect to the DX-80 system processor and download (receive) DX-80 database memory to the PC-DBA *working directory*.

Modem

- See F9-Modem below. This connection method can be used while off-site.

Connecting to the DX-80 processor

- Once a physical connection (cable or modem) has been made between the PC and the DX-80 system. You must link the two devices using the F5-Connect function. See the details below.
- When a successful connection has been established between the DX-80 processor and the PC PC-DBA software the following icon displays in the upper left corner of the PC-DBA screen:

```
[Cnt]
```

Receiving data

- Press F3. The options for what data to Receive are displayed:

```
+------------------+
¦ Receive Request  ¦
+------------------¦
¦ * Receive  All   ¦
¦ * Receive  Part  ¦
¦ * Receive  Item  ¦
+------------------+
```

- Use ↓↑→← to select from list - which receive technique you desire. When Receive All is selected, the data exchange is started immediately. When Receive Part or Receive Item is selected, you must chose either the specific data item (Item) or data category (Part) you wish to receive. Use ↓↑→← to select from the menus provided with these two functions.

Notes:

1. Always use Database Save prior to performing a Receive operation if you wish to preserve the current contents of the *working directory*. See Database Save.

2. It is recommended that whenever database changes are made to a system that has been in operation for some extended period of time, a Receive All operation should be performed prior to any database changes. Since some database fields including Speed Dial and Service Mode are user adjustable, these fields might be erased if a Send All operation is performed using an outdated PC-DBA database.

F4 – Send

- Before data can be exchanged between the PC and the DX-80 system, a connection must be made between the two devices. This connection is a serial (RS-232 – COM Port or Modem) link. While on-site the PC may be connected to the DX-80 via a standard RS-232C "straight-through" cable. When accessing the system remotely this connection can be made via a modem.

Cable

- Connection to the DX-80 system on site is accomplished via the PC serial port (COM Port). Use a straight-through 9-pin to 9-pin cable to from the PC serial port to the DX-80 CPM – PC-DBA Port. Once this connection is made, it is possible to connect to the DX-80 system processor and download (receive) DX-80 database memory to the PC-DBA *working directory*.

Modem

- See F9-Modem below. This connection method can be used while off-site.

Connecting to the DX-80 processor

- Once a physical connection (cable or modem) has been made between the PC and the DX-80 system. You must link the two devices using the F5-Connect function. See the details below.
- When a successful connection has been established between the DX-80 processor and the PC PC-DBA software the following icon displays in the upper left corner of the PC-DBA screen:

```
[Cnt]
```

Sending data

- Since PC-DBA programming edits the data files of the DX-80 in the PC *working directory* only, it is necessary to send this information from the *working directory* to the DX-80 system memory.
- Press F4. The options for what data to Send are displayed:

```
+------------------+
¦  Send Request    ¦
+------------------¦
¦ * Send     All   ¦
¦ * Send     Part  ¦
¦ * Send     Item  ¦
+------------------+
```

- Use ↓↑→← to select from list - which send technique you desire. When Send All is selected, the data exchange is started immediately. When Send Part or Send Item is selected, you must chose either the specific data item (Item) or data category (Part) you wish to send. Use ↓↑→← to select from the menus provided with these two functions.

Note: We recommend that whenever database changes are made to a system that has been in operation for some extended period of time, a Receive All operation should be performed prior to any database changes. Since some database fields including Speed Dial and Service Mode are user adjustable, these fields might be erased if a Send All operation is performed using an outdated PC-DBA database.

F5 – Connect

Connecting to the DX-80 processor

- Once a physical connection (cable or modem) has been made between the PC and the DX-80 system. You must link the two devices using the F5-Connect function.
- Press F5. If an adequate connection exists between the DX-80 system and the PC you will see the following Connect prompt:

```
+-------------------------------------------------------------------------+
¦                              Connect                                    ¦
+-------------------------------------------------------------------------¦
¦  (1)  : Receive Data From KSU                                           ¦
¦  (2)  : Don't Receive Data From KSU                                     ¦
¦         Please Select :                                                 ¦
¦  Note : To select (1) will receive [Numbering Plan],[Ext DIR No.]       ¦
¦         [CO Group DIR No.],[User Password] from KSU automatically,      ¦
¦         so these data you set previously on PC will be lost.           ¦
¦         To select (2), the data about 'DIR No.','User Password' on     ¦
¦         PC may be inconsistent with KSU.                                ¦
+-------------------------------------------------------------------------+
```

- Select “1” to receive the database items listed at the time of connection.
- Select “2” to connect to the system processor without an automatic data receive operation.

- Once you make your selection, you will be prompted to input the Database Administration Password. (At default this password is "_ _ _ _ _ _ _ _" (8 spaces). Press the space bar eight times.

```
+--------------------------------+
|            Connect             |
+--------------------------------+
|                                |
|   Please Input KSU Password:   |
|                                |
+--------------------------------+
```

- When all eight characters are input, the connection process is begun. If unsuccessful (wrong password or poor connection), the following error screen will appear:

```
+--------------------------------+
|            Connect             |
+--------------------------------+
|                                |
|            Failure             |
|          Press Any Key         |
+--------------------------------+
```

- If successful, confirmation is given via the following screen:

```
+--------------------------------+
|            Connect             |
+--------------------------------+
|                                |
|            Succeed             |
|          Press Any Key         |
+--------------------------------+
```

- When a successful connection has been established between the DX-80 processor and the PC PC-DBA software the following icon displays in the upper left corner of the PC-DBA screen:

```
[Cnt]
```

- Press any key to return to the PC-DBA programming screens. At this time F4-Send and F3-Receive operations can be performed.

F6 – Disconnect

Disconnecting from the DX-80 processor

- When a link is established between the DX-80 and PC-DBA, this link must also be broken when Send and Receive operations are complete. This breakdown of the connection will occur automatically if the connection path (cable or modem connection) is interrupted or when PC-DBA is exited while the link is active.
- To force a disconnect between the DX-80 processor and PC-DBA, press F6-Disconnect. This procedure is usually successful within only a few seconds.

F7 – Print

- At times a database printout is desirable. This utility allows printing of each PC-DBA screen. Printout requires that this screen be in use at the time F7 is pressed. (Note: It is often more convenient to use Database Save and view a database configuration through PC-DBA rather than reviewing the database via hard copy.)
- F7-Print also requires that a printer be connected to the PC Parallel port to operate.

F8 – Initialize

In the programming process it is often desirable to revert to factory defaults. F8-Initialize provides this utility. While in the various database programming menus press F8-Init to Initialize the current category of programming. Keep in mind that when F8-Init is used, the data is only saved when the programming screen is exited and only sent to the DX-80 CPM when the F4-Send operation is invoked.

Special Notes:

1. Initializing all PC-DBA parameters can be accomplished when a new system has been installed (hardware Cold Start performed) by F4-Connecting to the DX-80 processor and then performing F3-Receive All.

2. Initializing all PC-DBA parameters can be accomplished at the DOS prompt in the *working directory* by copying all "DEF" extension files to all "DAT" extension files. The following DOS command is used: "COPY *.DEF *.DAT."

F9 – Modem

- Remote connection to the DX-80 system is possible via modem. The optional modem may be purchased allowing remote administration of the DX-80 system database. The default directory number of the modem is 199. Some working knowledge of modem operation and connection is useful.

To establish a modem connection

- Make sure that the attendant at the site location is aware that a modem connection will be taking place. (Use of the automated attendant can greatly assist the modem connection process by removing the human element at the site location.)
- Press F9-Mdm. The following modem control screen displays:

```
+--------------------------------------+
¦                MODEM                 ¦
+--------------------------------------¦
¦              Connect                 ¦
¦              Disconnect              ¦
+--------------------------------------+
```

- Use ↓ ↑ → ← to select Connect, then press Enter. The following modem control string displays:

```
+--------------------------------------+
¦             MODEM Connect            ¦
+--------------------------------------¦
¦ Input MODEM control string :         ¦
¦ ATX1E0Q0V0&C1&D2&H0&I0&K0&M0&N3..... ¦
+--------------------------------------+
```

- If your modem requires some different control string, input that string now. Then press Enter.

```
+--------------------------------------+
¦             MODEM Connect            ¦
+--------------------------------------¦
¦          Input dial number:          ¦
¦ ..................................   ¦
+--------------------------------------+
```

- Input the telephone number to dial (at the site location). Then press Enter.

```
+--------------------------------------+
¦             MODEM Connect            ¦
+--------------------------------------¦
¦                                      ¦
¦               Waiting                ¦
+--------------------------------------+
```

- Dialing begins and then the modems negotiate connection. A successful negotiation results in the following confirmation display:

```
+--------------------------------------+
¦             MODEM Connect            ¦
+--------------------------------------¦
¦                                      ¦
¦           Connect Succeed            ¦
+--------------------------------------+
```

- The connection is also noted with an icon that appears in the upper left corner of the display: [Mdm].
- Once a modem connection has been accomplished, F4-Connect is possible. F4-Connect is required to link PC-DBA to the DX-80 system processor.

F10 – RS232C

- F10-RS232C is the utility to setup the PC COM port. To successfully setup the PC COM port you must know how the PC hardware is configured. In this utility you must select the COM Port number (1 or 2 supported) and the baud rate that will be used for the connection. At default PC-DBA is setup to use COM Port 1 at 9600 bps. (9600 bps matches the default baud rate set for the DX-80 CPM – PC-DBA Port.)
- While using a modem connection it is best to set the COM port baud rate at 2400 bps since this is the speed of the DX-80 Optional Modem. (Setting this speed can expedite the modem negotiation process since compression link choices will not be attempted.)

Database Administration – Via Any Digital Extension FEATURE # *TONE

The DX-80 system allows the user/installer to administer system database parameters via any DX-80 digital telephone. It is possible to program the DX-80 system while the telephone is in use; however, certain button operations are changed for the purposes of programming and cannot be used for telephone call processing. Therefore, we don't suggest using these features simultaneously unless you have been directed to do so by the servicing technician.

Default Settings

Database Administration Password is set at # # # # # # # # (eight "#"). (Range is: any combination of alphanumeric characters using the conventions of Extension/CO Line Name.)

Programming Abstract

- Enter the Database Administration to change any programmable system setting.
- Change the default password if necessary.

Enter the Database Administration mode at any Digital Extension:

- Press FEATURE # *TONE to enter Database Administration. The system then prompts for the system Database Administration password.
- Input the password: # # # # # # # #, then press [show]. ("show" is a LCD Interactive button.)
- When the correct password is successfully input, Database Administration is entered.

LCD Interactive buttons:

The LCD Interactive buttons are essential to complete database programming tasks. These buttons take on many functions while in the Database Administration mode. Throughout the programming instructions, the associated LCD Interactive button operation is indicated within square brackets [ ]. LCD Interactive buttons include the following:

[back] move back one database item or database item parameter

[next] move to the next database item or database item parameter

[show] show the contents of the current database item or parameter

[chg] change the contents of the current database item or parameter

[bksp] used during data input to "backspace" over input data and re-input new data

[save] used to save input data

Database Item Select:

After you enter the correct password and press [show] (see Enter DB Admin mode above), the DX-80 Database Administration opens and the Database Item Select screen displays. This screen allows the programmer to skip to the necessary database item for immediate programming of that item. Each database item is indexed for this purpose. Details of the indexing are available in the DX-80 Programming Guide and in the programming instructions of each feature description in this manual. These are the first level indices:

EXTENSION
CO LINE
CALL HANDLING
SYS RESOURCE
RESTRICTION
EXT APPLICAT.
CO APPLICAT.
SYS APPLICAT.

Example: To skip to the Extension Application section of Database Administration, input “05” at the Database Item Select screen and then press [save].

Exit Database Administration:

- To exit Database Administration press the ON/OFF button twice. Or lift and replace the handset in the hook-switch cradle.

Change Database Administration Password:

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password # # # # # # # #. (Default password.) (Note: “#” is the equivalent of entering a space, so the default password is 8 characters.)
- Press [show]. The DB Item Select screen displays.

  Note: 1. All database programming items are indexed for fast access.
  2. Use the Volume button (up or down) to return to the DB Item Select.
- Input **04-01**. Then press [save]. This advances to the System Resources – DB PSWD screen. The current password displays (default is all spaces {blanks}).
- Press [chg] to change the password.
- Input the new eight-character, alphanumeric password using the table below as a guide to characters.
- Press [save].
- Continue making other programming changes or exit the programming mode.

Default Set

FEATURE 6 MNO 9 WXYZ

When an extension user has invoked several features on his or her extension, it may be necessary to clear all settings and return the telephone set to the factory condition. The Default Set code is used to perform this operation.

Operation

1. Press FEATURE 6 MNO 9 WXYZ.

   The display shows the following screen to confirm the intention:

   DEFAULT SET
   go

2. Press [go] to invoke the operation.

   You hear the confirmation tone and the operation is complete.

Conditions

The following extension parameters are reset to the value shown:

LNR = empty
SNR = No Saved Number
Memo = No Saved Number

Telephone Lock = No
Auto Hold = No
Page Receive = Yes
Busy Ring = Yes
Hotline to = NULL (none)

Dial Pad Confirmation / Touch Tone

FEATURE # 1

Dial Pad Confirmation is a tactile response tone that confirms Dial Pad button operations. Whenever a dial pad button is pressed while this feature is enabled (default) a low-volume tone is emitted through the telephone speaker indicating that this dial pad button has been pressed. This tactile response feature is either very desirable or disliked. This feature code allows the function to be disabled if necessary.

Operation

1. While the telephone is idle, press. FEATURE # 1.

   You hear the confirmation tone and the display indicates the current status.

   TOUCH TONE ON

   TOUCH TONE OFF

2. Momentarily the display returns to idle.

Direct Inward System Access (DISA) (Optional AAM required)

This feature allows you to remotely access system resources such as System Speed Dial, CO Line Access, and Intercom dialing.

Any number of DISA lines may be assigned as incoming DISA access based on the system service mode (Day, Evening).

DISA can be accessed via the Automated Attendant as well as by dedicated DISA lines.

Access to DX-80 system resources for out-calling is secured by means of verified passwords against the assigned extension number. Use of system resources is accomplished only when a valid extension number has been entered and when the password entered matches that stored for the extension number entered.

Related Features

Auto Attendant
System Speed Dial
Intercom calling
CO Line calling

Related Programming

Call Handling - DISA

Operation

1. Call into the DX-80 system from some remote location.
2. If answered by the Automated Attendant, press 9 WXYZ to access DISA.
3. If the dialed number is a DISA line only – the line will automatically be answered after the Ring Time to Answer timer has expired.
4. DISA dial tone is heard (stutter dial tone).
5. Dial an extension number, Hunt Group number, the Operator code. Ring-back tone is heard until the call is answered.

Or…

5. Dial "#" + Extension Password + Extension Number + "#." If the extension number and password match, authorized intercom dial tone is provided based on the entered extension number COS.
6. Dial a CO Line Group code or CO Line directory number to access a system CO Line to dial out.
7. Hang up when finished.

Conditions

a) Four DISA CO lines may be used simultaneously. If more than four DISA CO lines are signaling for answer, the subsequent calls will receive internal busy tone.

b) While DISA-to-CO calls are in use, DTMF receivers on the AAM are dedicated to the function. Therefore the quantity of DTMF resources (four), are reduced (by one) for each DISA-to-CO call in progress. This affects Automated Attendant operation since DTMF receivers are required to collect digits from outside callers.

c) The default Class of Service (COS) of day and night for DISA CO lines is 0. Each DISA CO line has its own COS for dialing privileges.

d) DISA CO line COS assignment coincides with Toll Restriction COS Tables.

e) The activation time for a DISA CO line is programmable for "Never," Day," "Night" or "Always."

f) If you dial an extension number, which is non-existent, your call will be directly transferred to the attendant.

g) The DISA Talk Time is programmable for 1, 2, 3, 5, 10, and 15 minutes (default is 1 minute). The DISA Talk Time is set to automatically drop the connected outside parties upon expiration of the preprogrammed time. A warning tone is heard 10 seconds prior to the disconnect operation.

h) DISA Talk Time can be extended while connected in a DISA call. To extend the Talk Time: dial 0(OPER)+*(TONE). (This restarts the DISA Talk Timer.)

i) To disconnect a call originated via DISA (before the Talk Time expires), dial 0(OPER)+#.

Default Settings

Call Handling – DISA – Ring Time to Answer is set to "0." (Range is: 0-99 seconds.)
Call Handling – DISA – Allowed Extension: COS 0 is set to "Yes," COS 1-7 are set to "No." (Range is: Y/N.)
Call Handling – DISA – DISA Line is set to "No" for all CO Lines. (Range is: Y/N.)
Call Handling – DISA – Day COS is set to follow "0." (Range is: 0-7.)
Call Handling – DISA – Evening COS is set to follow "0." (Range is: 0-7.)
Call Handling – DISA – Service is set to: "Always" for all CO Lines. (Range is: ALWAYS/NEVER/DAY/EVE.)
Call Handling – DISA – Talk Time is set to "5" minutes. (Range is: 1/2/3/5/10/15.)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE#*(TONE) and then enter the DB Admin password "########." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-44, then press [save]. This advances to the DISA programming screen.
- Press [show]. This advances to the **Ring Time to Answer** screen.
- Press [chg] to change the Ring Time to Answer.
- Input the ring time (0-99) and then press [save].
- Press [next] to advance to the next data item, Allowed Extension COS.
- Press [show] to select the **Extension Classes of Service** that will be allowed to use the DISA feature to make system CO Line calls. Extension COS 0 displays. (Y/N)
    - Press [chg] to change the COS 0 value.

Or…

- Press [next] to advance to the next Extension COS for programming.
- Follow this convention for each of the Extension Classes of Service using [next] and [chg] operations as required. Continue pressing the [next] button through all Extension Classes of Service until the next database item displays or press the Hold button to exit Extension Class of Service and exit to the previous menu.
- Press [next] to advance to CO Line specific DISA programming. The CO Line input screen displays SHOW CO LN.
- Input the CO Line directory number (740~755).
- Press [show]. This advances to the **DISA CO LINE** (Y/N) screen.
  - Press [chg] to change this data item value.
- Press [next] to advance to **DISA DAY COS**.
  - Press [chg] until the appropriate value displays. (This data item will determine which extension COS *model* to follow for DISA calls made into the system while the system is in DAY mode.)
- Press [next] to advance to **DISA EVE COS**.
  - Press [chg] until the appropriate value displays. (This data item will determine which extension COS *model* to follow for DISA calls made into the system while the system is in Evening mode.)
- Press [next] to advance to **SERVICE** mode.
  - Press [chg] until the appropriate value displays. (This data item will determine when the DISA feature will be active for the selected CO Line. NEVER/DAY/EVE/ALWAYS.)
- Press [next] to advance to **TALK TIME**.
  - Press [chg] until the appropriate value for this data item displays. (The Talk Time will determine the duration of outgoing CO Line calls made via the DISA feature on this CO Line.)
- Press [next]. This advances to the input CO Line directory number screen so that another CO line may be programmed for DISA if necessary.
- Input the CO Line directory number to program for DISA operation and then press [show] and set the necessary data item values as above.

Or…

- Press the Hold button to exit DISA programming and return to the previous menu level.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight “Call Handling.” Then press Enter.
- Use ↓ ↑ → ← to highlight “DISA.” Then press Enter.

Program Ring Time to Answer and/or Allowed Extension COS:

- Use ↓↑→← to highlight "DISA – Category 1." Then press Enter.
- Use ↓↑→← to highlight the database item that requires change.
- Press Enter until the appropriate value displays.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.

Program DISA Line, COS, Service and/or Talk Time:

- Use ↓↑→← to highlight "DISA – Category 1." Then press Enter.
- Use ↓↑→← to highlight the database item that requires change.
- Press Enter until the appropriate value displays.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Direct Station Selection Console

The Direct Station (extension) Selection Console is a self-contained digital device that connects to an available DX-80 digital port. The console provides one-button access to system resources for the extension to which it is programmed to operate. The console has 48, dual-color LED buttons that can be programmed for system resources that require visual interaction to properly administer the associated resource. There are also 12 buttons with no LED for fast access to system resources that require no visual interaction.

The DSS Console occupies one DX-80 system digital port and therefore reduces the maximum system digital extension capacity on a one-to-one basis for each DSS Console installed. The DX-80 system supports 12 maximum DSS Consoles.

Related Features

Attendant/Extension DSS Console Button Programming	Busy Lamp Field
All system resources accessed via Directory Numbers	Transfer

Related Programming

System Resource – DSS Allocation – DIR #
System Resource – DSS Allocation – DSS Owner
Feature Key Programming – DSS Set

Operation

When a DSS Console has been assigned to operate with your extension, use the feature buttons of the console in the same way that the 30 programmable buttons of the telephone are used. Refer to each feature description for specific operations.

Conditions

a) 12 maximum DSS Consoles can be assigned in the DX-80 system.
b) DSS Consoles can be programmed with numbering plan directory numbers only (no Feature access codes can be programmed on DSS Console buttons.)

Default Settings

System Resource – DSS Allocation – No ports assigned as DSS Consoles, no ports assigned as DSS Console Owner extensions. (Range: any valid extension port Directory Number.)
Feature Key Programming – reference the Specifications section of this manual to review the default map of DSS Console buttons.

Programming Abstract

- Program the associated digital port as a DSS Allocations – DSS Dir Number.
- Program the digital extension as the DSS Console Owner.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program DSS Owner (04-14-1-01~12):

- Input 04-14-1-01~12, then press [save]. This advances to the DSS Allocation programming screen for the DSS Console selected (1~12).
- Press [save]. This advances to the **DSS Owner** screen and displays the current contents.
- Press [chg] to change the DSS Owner (the extension for which this DSS is to operate).
- Input the extension and then press [save].
- Press [next] to advance to the next data item, **DIR NUMBER**.
- Press [chg] to change/enter the digital port directory number where the DSS is connected.
- Input the directory number of the digital port where the DSS Console is connected, then press [save].
- Press [save].
- Press [next] to enter more DSS Console data.
- Input the next DSS Unit number (1~12) to program.
- Press [show].
- Follow the convention above for all DSS Console programming.

- Press the Hold button to exit DSS Allocation programming and return to the previous menu level.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight “System Resource.” Then press Enter.
- Use ↓↑→← to highlight “DSS Allocation.” Then press Enter.
- Use ↓↑→← to highlight the DSS to allocate (up to 12 DSS Consoles may be added to the system). When allocating DSS Consoles, two directory numbers are required, the actual digital extension port directory number where the DSS Console is connected (“DIR No.”) and the Digital Extension Directory Number of the extension to which this DSS Console is to be associated (“DSS Owner”).
- Press Enter.
- Input the directory number for the selected data item. (For “DIR No.” input the directory number of the port where the DSS console is connected. For “DSS Owner” input the directory number of the extension to be associated to this DSS Console.)
- Press Enter. This temporarily stores this data while other changes are being made.
- Use ↓↑→← to move the cursor to the next database item and input as data as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.Discriminating Ringing.

Discriminating Ringing

Discriminating Ringing is provided to denote ringing patterns specific to system resources. Ringing at an extension for intercom calls is different than ringing for CO Line calls. This difference is referred to as Discriminating Ringing.

There are 10 choices of ring schemes that can be selected.

Related Features

Transfer Intercom

Related Programming

System Application – Ring Scheme

Default Settings

System Application – Ring Scheme = 3. (Range is 0-9.)

Default Settings

Program the Ringing Scheme.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **08-01** to program **Ring Scheme**.
- Press [chg] until the appropriate value displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Application." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use ↓ ↑ → ← to highlight "Ring Scheme."
- Press Enter until the appropriate Ring Scheme displays.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Distinctive Ringing – CO Line

Distinctive Ringing – CO Line provides a means for denoting one CO Line from another while ringing. The distinction provided is a tone allocation used to denote one CO Line from another. Eight (8) choices are available for CO Line ringing.

Related Features

CO Line – Answering Position
Distinctive Ringing – Extension
Transfer

Related Programming

System Application - Operator Code

Default Settings

CO Line – Ring Type = 0. (Range is 0~9.)

Conditions

a) CO Line – Distinctive Ringing overrides an extensions setting of Distinctive Ringing.
b) A CO Line set as Ring Type "0" has no specific ring type and follows Distinctive Ringing – Extension settings.

Default Settings

CO Line – Category 2 – CO Ring Type is set to "0" for all CO Lines. (Range is: 0-8.)

Programming Abstract

Program the CO Line(s) for the CO Ring Type. Type "0" indicates this CO Line has no distinctive ringing assignment and will follow the ringing Type of the Extension(s) that ring for this CO Line.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **02-740~755-11**, then press [save]. This advances to the **CO RING TYPE** programming screen for the CO Line selected (CO Line 1=740 ~ CO Line 16=755).
- Press [chg] until the appropriate value for this data item displays.
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "CO Line." Then press Enter.

- Use ↓↑→← to highlight "Category 2." Then press Enter.
- Use ↓↑→← to highlight the database item "CO Ring Type" for the CO Line to be changed.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Distinctive Ringing – Extension

#7PQRS

Distinctive Ringing – Extension provides a means for denoting one ringing extension from another. There are eight (8) choices are available for an extension to choose.

Related Features

CO Line – Answering Position
Distinctive Ringing – CO Line
Transfer

Default Settings

Distinctive Ringing is set to 1. (Range is 1~8.)

Operation

1. Press the Distinctive Ringing Tone code FEATURE #7PQRS.
2. The current Tone is heard and the setting displays

   RING TYPE :1
   chg

3. Press [**chg**] until the appropriate tone is heard and displayed.

Conditions

a) CO Line – Distinctive Ringing overrides an extensions setting of Distinctive Ringing.
b) The Distinctive Ringing code may be programmed on any available Feature button.

Default Settings

CO Line – Category 2 – CO Ring Type is set to "0" for all CO Lines. (Range is: 0-8.)

Do Not Disturb

FEATURE 4 GHI

DND allows you to temporarily block and discontinue ringing from incoming CO calls and intercom calls. You can activate DND while your telephone is idle or busy. Some extensions with higher Class of Service may override an extension's DND condition. Also, UCD Group ringing overrides extension DND.

When you have activated DND, you will hear a special intercom (stutter) reminder tone when you lift the handset or use the speakerphone. If you have assigned a button on your digital speakerphone specifically for DND, that button will light whenever you activate the feature.

Related Features

Do Not Disturb Override
Do Not Disturb – One Time
Forced Intercom Call Forward
Feature Button Disable

Related Programming

Extension – Feature Button Disable

Operation – Set Do Not Disturb (DND)

1. While your telephone is idle (no other call activity) press FEATURE 4 GHI.
2. Do Not Disturb is activated and the display momentarily displays:

```
DO NOT DISTURB
```

3. When the display reverts back to idle condition the set condition is indicated in the bottom row of the display. The idle extension in DND shows:

```
SEP 25 MON 10:25
EXT    DND  103
```

Analog Ports (Single Line Telephones)

1. Dial # 4 GHI.
2. Repeat to clear.

Operation – Cancel Do Not Disturb (DND)

1. While your telephone is idle (no other call activity) press FEATURE 4 GHI.
2. Do Not Disturb is deactivated and the display momentarily displays:

```
DND DELETE
```

3. When the display reverts back to idle condition the "DND" is removed from the display.

Conditions

a) Do Not Disturb cannot be enabled if you have activated Call Forward.
b) At any time while your digital speakerphone is idle, you may immediately divert an incoming tone ringing intercom call to the attendant by using the DND feature – Forced Intercom Call Forward.
c) Any DSS/BLF button of your extension will flash when you activate DND.
d) The DND feature code may be programmed on a programmable feature button.
e) A feature button programmed for the DND code will light steady whenever DND is active

Do Not Disturb – One Time

FEATURE 4 GHI

DND – One Time allows you to block CO Line ringing (Transfer or direct) while engage in the current call. The advantage of DND –One Time is that you don't have remember to deactivate DND, it will automatically disable at the conclusion of the current call.

Related Features

Call Forward
Intercom
Feature Button Disable
Forced Intercom Call Forward

Related Programming

Extension – Feature Button Disable

Operation

1. While you are connected on a call (CO Line or Intercom) someone transfers a CO Line to your extension, ringing is heard to cancel ringing for this call, press FEATURE 4 GHI.
2. Do Not Disturb – One is activated.
3. DND will deactivate when the current call is disconnected.

Conditions

a) The DND feature code may be programmed on a programmable feature button.
b) A feature button programmed for the DND code will flash at a fast rate while DND – One Time is active.

Do Not Disturb – Override

DND – Override allows you to override the DND condition at another extension. This feature should be used with some discretion since the extension in DND has invoked the feature for that purpose.

Related Features

Call Forward
Intercom
Intrusion
Forced Intercom Call Forward
Intrusion Active

Related Programming

Extension – Intrusion Active

Operation – Calling an Extension in Do Not Disturb (DND)

1. Place intercom call to the extension in DND. DND tone is heard and the display indicates the condition of the called extension:

```
EXT 103     DND
override
```

2. Press [**override**].
3. The called extension rings.

Conditions

a) An extension in DND that has been override will tone ring indicating the override.
b) An extension in DND that has been override may invoked Forced Intercom Call Forward.
c) The DND feature code may be programmed on a programmable feature button.
d) A feature button programmed for the DND code will flash at a fast rate while DND – One Time is active.

e) An extension must be programmed for the ability to Intrude upon an extension to operate this feature. (See Intrusion.)

End-To-End Signaling/Voice Mail Dialing Ratio

This feature allows Digital Speakerphone extensions to generate in-band DTMF tones while connected on ICM calls to an on-site voice mail system and to ancillary devices connected to the External Page Port.

Related Features

Voice Mail

External Paging

Related Programming

Extension – Port Type
System Application – Numbering Plan – External Pager
Call Handling – VM Dialing Ratio – Tone Time
Call Handling – VM Dialing Ratio – Inter Digit Time

Operation

When intercom calls are made to either an External Page Port or a Voice Mail System, digits dialed on the dial pad are sent to the connected device as DTMF tones.

Conditions

a) DTMF digits are only generated to extension ports of Type VM.
b) DTMF tone time and inter-digit time follows the programming of VM Dialing Ratio.

Default Setting

Call Handling – VM Dialing Ratio – Tone Time = 120. (Range is 60-150.)
Call Handling – VM Dialing Ratio – Inter Digit Time = 120. (Range is 60-150.)

Programming Abstract

- Program Extension Port as required for VM operation – reference Voice Mail – Analog Integration.
- Program dialing ratios as required by the ancillary devices.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-33-01, then press [save]. The Tone Time displays.
- Press [chg] until the appropriate Tone Time displays.
- Press [next]. The Inter-Digit Time displays.
- Press [chg] until the appropriate Inter-Digit Time displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight "Category 3." Then press Enter.
- Use ↓↑→← to highlight "VM Dialing Ratio – Tone Time" or "Inter-Digit Time."
- Press until the appropriate time displays for the parameter.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Enhanced Lettering Scheme

Extension User Names, CO Line Names, Pre-Programmed Messages, and UCD Names (programmed into the customer database) may be enhanced for special requirements using the choices available in the Letter Schemes. The end user may select from eight different lettering schemes that can be programmed for use at any one installation. While these names are being entered (in database programming) and while the user is editing an Outgoing Message, the chosen Letter Scheme characters will be accessible with successive depressions of the "1" dial pad key. Use the following table to determine what letter scheme best suits this installation.

Related Features

Extension User Names
CO Line Names
Messaging – Call Me, Text or Voice
UCD / Hunt Groups
Alphanumeric Display

Related Programming

System Resource - CO Line Names
System Resource - User Name
System Resource - Messaging
Extension Application - Uniformed Call Distribution - Name

Operation

Refer to the specific Name Feature to be programmed.

Conditions

Only one Letter Scheme can be active at one time.

Default Settings

System Application – Letter Type: is set to "0." (Range is: 0-7.)

Programming Abstract

Program the Letter Type for the special character set available via numeral 1 (dial pad digit key) for Name in Display.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **08-02**, then press [save]. This advances to the **LETTER TYPE** programming screen.
- Press [chg] until the value for this data item displays.
- Press the Hold button to exit DISA programming and return to the previous menu level.
- Press the Volume button (up or down) to return to the DB Item Select screen.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Application." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use ↓ ↑ → ← to highlight "Letter Type."
- Press Enter. Each time you press Enter, the value of this database item is updated. Use the table to determine the specific Enhanced Letter Type for this application.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Extension Feature Status Check

FEATURE # 8 TUV

The Digital Speakerphone user can quickly determine the status of all user-controlled features. This feature is useful for the technician as well as the user since some feature conditions may not be evident if they are not programmed on an available programmable feature button. The current status can be observed using the LCD interactive buttons.

The following features are checked with this code:

LNR = empty
SNR = No Saved Number
Memo = No Saved Number
Telephone Lock = No
Auto Hold = No
Page Receive = Yes
Busy Ring = Yes
Hotline to = NULL
Position
Tenant Group
Pickup Group
Paging Group
Day COS = 0
Eve COS = 0
Monitor COS = 5
Warning Tone = No
Drop Call Out = No
Drop Call In = No
Intrusion Active = Yes
Intrusion Accept = Yes
Intrusion Tone = Yes
ECF Operation = No
SMDR Output = Yes
ICM Mode = VC-HF

Operation

1. The Digital Speakerphone must be idle.
2. Press FEATURE # 8 TUV.
3. The display shows the contents of LNR (Last Number Redial).
4. Use the right soft button to advance through all of the various extension features.
5. The telephone must be idle.

Extension Paging Groups

The system provides eight (8) Extension Paging Groups per Tenant Group for partitioning the system into separate departments for page announcements.

As an Extension Paging Group member, you receive Internal Zone Pages directed to your Extension Paging Group. Extension Paging Groups are assigned in the Database Programming.

Related Features

Extension Paging

Related Programming

Extension – Paging Group
System Application – Numbering Plan – EXT Page Group

Conditions

a) Extensions may be assigned to only one Extension Page Group
b) When Page Announcements are made, all idle extensions in the Extension Page Group dialed by the paging extension will receive the voice announcement from that extension.
c) Busy extensions, extensions in DND and extensions that have invoked Page Deny at their extension will not receive page announcements.
d) Extensions that are receiving page announcements are busy for other intercom calls.

e) Extensions that are receiving page announcements will show busy on DSS/BLF buttons at other extensions.

Default Setting

Extension – Paging Group 1. (Range is 1-8.)
System Application – Numbering Plan – EXT Page Group = 400~408

Programming Abstract

- Refer to Flexible Numbering Plan to program the EXT Page Group directory numbers.
- Program extensions into Page Groups as required.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **01-101~156-04**, then press [save].
- Press [chg] until the Paging Group for the selected extension displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Extension." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use ↓ ↑ → ←, Page Up Page Down to highlight "Paging Group" for the extension.
- Press Enter until the necessary Page Group number displays for this extension.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Extension Password

All extensions of the DX-80 system have an associated User Password. Passwords are used to facilitate Phone Lock, Call Forward Remote and Attendant features. Password length is system programmable from four to eight characters.

Related Features

Call Forward – Extension (Remote)
Phone Lock/Unlock
Attendant Administration
Caller ID - Call Table
Direct Inward System Access (DISA)

Related Programming

System Resource - User Password - Length
System Resource - User Password - Password

Operation

Refer to the specific feature for operation.

Default Settings

System Resource – User Password: Extension 101 is set to "9999," All other extensions are set to "0000." (Range is: any alphanumeric characters up to the allocated User Password Length.)
System Resource – User Password – Length is set to "4." (Range is: 4-8.)

Programming Abstract

- Program the User Password Length. (Note: Changes to the length of the User Password affect the existing programmed passwords by adding or subtracting one default character to the end of the existing password. When the length of the User Password is extended, all passwords increase by one character, and when the length of the User Password is reduced, all passwords decrease by one character.)
- Program the passwords for each extension.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program User Password Length

- Input **04-04-01**, then press [save]. The current User Password Length displays.
- Press [chg] until the appropriate Extension Password Length displays (valid lengths 4-8).
- Press [next] to advance to the Extension password view screen.
- Input the extension number to change (e.g., 101)
- Press [save]. The Password for the extension entered displays.
- Press [back] or [next] to return to the extension number input screen and repeat the above operations to view other extension passwords.

- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.
- (Extension Passwords are changed at the extension only via the Phone Lock feature.)
- Continue making other programming changes or exit the programming mode.

To view Extension passwords: (from the DB Item Select screen)

- Input 04-04-02-101~156.
- Press [save]. The selected extension password displays.
- Press [back] or [next] to input another extension number and repeat the above operations to view other extension passwords.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "System Resource." Then press Enter.
- Use ↓↑→← to highlight "User Password." Then press Enter.

Program User Password Length:

- Use ↓↑→← to highlight User Password Length, then press Enter.
- Input the User Name Password Length (4-8), then press Enter.

Program Extension Password(s):

- Use ↓↑→← to highlight the extension password to be changed and press *enter*.
- Input the new numeric password then press Enter.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Extension Pick Up Groups

The system provides eight (8) Extension Pick Up Groups per Tenant Group for partitioning the system into separate departments for organized call answering within the department.

As an Extension of a Pick Up Group, you may retrieve calls ringing at another extension within the same pick up group. Extension Pick Up Groups are assigned in the Database Programming.

Related Features

Call Pick Up
CO Line Ring Assignment
CO Line Receive Assignment
Transfer

Related Programming

Extension - Pick Up Group
System Application - EXT Pickup Group

Operation

Refer to Call Pick Up.

Conditions

a) Extensions may be assigned to only one Extension Pick Up Group.
b) Pick Up priority is CO line calls then intercom calls. CO line call priority is Camped-On, Recalling, Transferred, then incoming. Intercom call priority is Ringing then Voice Call.

Default Settings

Extension – Category 1 – Pick Up Group is set to "1." (Range is: 0-8.)

Programming Abstract

Program the Extension(s) for the Pick Up Groups.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **01-101~156-03**, then press [save]. This advances to the Pickup Group programming screen for the selected extension.
- Press [chg] until the appropriate value for this data item displays.

To continue programming Pickup Groups for other extensions:

- Press the Hold button to exit programming for this extension and input a new extension.
- Press [show].
- Press [next] until the database item Pickup Group displays for this extension.

Or…

- Press the Volume button (up or down) to return to the DB Item Select screen and input the extension number and the Pickup Group item number (03).
- Continue making other programming changes or exit the programming mode.

- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Extension." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use ↓ ↑ → ←, Page Up Page Down to highlight the database item "Pickup Group" for the Extension to be changed.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Extension Programming Copy

This database feature is used to copy the various extension programming settings quickly from one extension to other extensions. There are two methods to copy extension data to other extensions: 1) "individual" is used to copy from the source extension to other extensions, one at a time; 2) "group" is used to copy from the source extension to other extensions, using the Pick Up Group to identify the extensions that will receive the copy as a group.

Related Programming

System Application - Extension Copy, Feature Key Copy, CO Line Copy, DSS Copy

Conditions

a) The source extension must have all programming changes completed prior to invoking a copy.
b) When using Group Copy, all extensions to receive the copy must be programmed for the correct Pick Up Group to associate them with other extensions to receive this copy.

Programming Abstract

Use Extension Programming Copy to copy the programmed settings of one extension to one other extension or to a group of extensions.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Individual Copy mode (copy one "source" extension data to other extensions one-at-a-time):

- Input **08-12-01**, then press [save]. This advances to the INDIVIDUAL COPY programming screen.
- Press [show]. This advances to the COPY FROM screen.
- Input the "source" extension directory number.
- Press [save]. This advances to the COPY TO screen.
- Input an extension directory number where this data is to be copied, then press [save].
- The COPY TO screen is immediately prompted again and the data may be copied again to other extensions. Repeat the process for all extensions to be copied with this data.
- Press the Hold button to exit Individual Copy programming and return to the previous menu level.
- Continue making other programming changes or exit the programming mode.

Group Copy mode (copy one "source" extension data to many other extensions via Pickup Group association):

- Input **08-12-02**, then press [save]. This advances to the GROUP COPY programming screen.
- Press [show]. This advances to the COPY FROM screen.
- Input the "source" extension directory number.
- Press [save]. This advances to the COPY TO screen.
- Input a Pickup Group directory number associated to the extensions where this data is to be copied, then press [save].
- The COPY TO screen is immediately prompted again and the data may be copied again to another group of extensions via another Pickup Group directory number. Repeat the process for all extension Pickup Groups to be copied with this data.
- Press the Hold button to exit Individual Copy programming and return to the previous menu level.
- Continue making other programming changes

Or…

- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.

- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Application." Then press Enter.
- Use ↓ ↑ → ← to highlight "Extension Copy." Then press Enter.
- Select the appropriate copy technique:
  "**Individual**" to copy programming from one extension to other extensions, one extension at a time.
  "**Group**" to copy programming from one extension to a group of extensions, one group at a time.
- Press Enter. The cursor is positioned on the Source database item.
- Input the Source extension directory number.
- Press Enter. The cursor advances to the next database item input area "Destination DIR No."
- Input the directory number of the Extension (if Individual) or Extension Pickup Group (if Group) for which the source extension data is to be copied.
- Press Enter. (Note: The copy is performed at this time. There is no "are you sure" prompt given.) When the copy function is completed the cursor is positioned to accept another directory number for which to copy the data again. Continue entering destination directory numbers,

Or…

- Press the **ESC** (escape) key. At this time you may enter a new source extension directory number and complete the process for another extension or group of extensions.
- To exit this database-programming screen, press the **ESC** (escape) key again. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- Continue making other programming changes or exit PC-DBA programming.

Note: changes made via PC-DBA are NOT updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming Guide section of this manual to learn more about this procedure.

Extension Swapping

As part of the Flexible Numbering Plan in the DX-80 system, extension directory numbers (as defined in the database programming) can be exchanged (swapped) from one port to another. This feature can be used to simplify moves and changes of extensions at any specific location. When extension directory numbers are swapped from one port to another, the associated programming is moved with the extension number.

Related Programming

Extension - DIR number Swapping, DSS Unit

Conditions

Extension directory numbers can only be swapped with valid (numbering plan defined) extension directory numbers.

Programming Abstract

Use Extension Swapping (Directory Number Swapping) to exchange directory numbers of one extension port with another extension port.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

- Input 01-101~156-22, then press [**save**]. This advances to the Directory Number Swapping screen.
- Press [**show**].
- Input the extension directory number that is to be assigned to this port, then press [**save**]. The new directory number is now in operation on this port. The old directory number is now moved to the port where the new number came from.
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "Extension." Then press Enter.
- Use ↓↑→← to highlight "Category 4" and then press Enter. The Extension – Category 4 screen (DIR No. Swapping) displays. The cursor is positioned on the first digital extension port.
- Use ↓↑→←, Page Up Page Down to highlight the extension port to be changed.
- Press Enter.
- Input the new directory number for this extension. (Note: The directory number must be a valid Extension Directory Number as allocated in System Applications – Numbering Plan 2.)
- Press Enter to invoke the swapping of directory numbers. If this directory number was in use at another extension port, that port is immediately reassigned the directory number previously assigned to the port where the swap was invoked.
- Continue swapping extension directory numbers as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
- Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Extension User Name

An alphanumeric, seven-character title may be assigned to each extension in the system. This title will be displayed on the Digital Speakerphone in place of the standard "EXT" message.

Extension user names are programmed in the customer database programming. The names may consist of upper and lower case letters and numbers and various “special” characters as provided by the Enhanced Lettering Scheme feature selection.

Related Features

Enhanced Lettering Scheme

Intercom Calling - Non Blocking

Related Programming

System Resource - User Name
System Application - Letter Type

Conditions

a) The programmed Extension User Name will be displayed at called extensions whenever intercom calls are made for one extension to another.
b) Whenever there is no Extension User Name programmed, the characters “EXT” are displayed.
c) When a User Name is programmed for extensions the “EXT” normally displayed at that idle extension will be replaced with the programmed name.
d) Names may be seven (7) or fewer characters.

Default Settings

System Resource – User Names: all User Names for all extensions are set to “Null” (nothing programmed). (Range is: any alphanumeric character set up to 7 characters.)

Programming Abstract

Program the user names for the extensions as appropriate.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **04-05-101~156** then press [save]. This advances to the Extension User Name programming screen for the extension selected (101~156).
- Press [chg].
- Input the new Extension User Name for this port using the Dial Pad and the following table: (# 0 OPER 1 2 ABC 3 DEF 4 GHI 5 JKL 6 MNO 7 PQRS 8 TUV 9 WXYZ * TONE are used to input alphanumeric labels for extension ports).
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight “System Resource.” Then press Enter.
- Use ↓ ↑ → ← to highlight “User Names.” Then press Enter.

- Use ↓ ↑ → ←, Page Up Page Down to highlight the User Name field for the extension to be changed.
- Press Enter.
- Input the appropriate name for this extension (any alphanumeric characters up to 7 characters).
- Press Enter.
- Continue programming User Names as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

External Music Source (Two Standard) 7 7 1 / 7 7 2

The system provides two (2) dedicated 3.5 Millimeter phono-jack type inputs to connect two external music sources. These music sources can be monitored at Digital Speakerphone extensions using the Background Music codes (771/772). The Background Music codes can be used to listen to either Background Music channel depending on Database Programming.

These music sources are programmable for Music-On-Hold on a per CO Line basis. Any CO line party placed on Hold will hear the music source programmed for that CO Line. (See Music On Hold)

The external music source may be a radio tuner, tape deck, CD player, Message on Hold or other source for the system Music-On-Hold and Background Music option. (Note: It is the users responsibility to adhere to all applicable copyright laws and any other music source restrictions.)

Related Features

Background Music
CO Line Group
Music On Hold

Related Programming

CO Line - MOH Source
System Application - Music Source

Operation

See Background Music.

Conditions

An external music source must be connected to the KSU1-CPM MC1 or MC2 port for this feature to operate.

Default Settings

System Application – Numbering Plan 4 – Music Source directory numbers are set at "771" for music channel 1 and "772" for music channel 2. (Range is: any available, non-conflicting directory number.)

Programming Abstract

Program the music directory numbers.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Music Directory Number Length:

- Input **08-09-09-01**, then press [save].
- Press [chg] until the appropriate length displays.
- Press [next] to program Leading 1.

Program Music Directory Number Leading 1, 2 or 3:

- Input **08-09-09-02**, then press [save].
- Press [chg].
- Input the new directory number leading digit(s) (see Flexible Numbering Plan for rules of Directory Numbers). Then press [save].

- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Application." Then press Enter.
- Use ↓ ↑ → ← to highlight "Numbering Plan 4." Then press Enter.
- Use ↓ ↑ → ← to highlight "Music Source – Length" if the length of this code is to be changed.
  - Press Enter until the appropriate length displays.

Or…

- Use ↓ ↑ → ← to highlight the directory number code that is to be changed, Music Source – Leading 1, 2 or 3.
- Press Enter.

- Input the new appropriate code and then press Enter to temporarily store this data.
  See Flexible Numbering Plan for rules of directory number application.

- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

External Paging

7PQRS 7PQRS 7PQRS

The system provides external one-way, dedicated paging access to a paging amplifier or multi-zone one-way page controller. The External Paging Zone may be accessed individually or with all eight (8) Internal Paging Zones as an All Call Page.

Related Features

Paging

Meet Me Page

Related Programming

Extension - Paging Group, Paging Allow

Operation

1. While in the idle condition – lift the handset.
2. Dial the External Page access code 7PQRS 7PQRS 7PQRS.
3. Page Alert Tone is heard.
4. Make paging announcement.
5. Hang up when finished.

Conditions

The External Page access code may be programmed on any feature button.

Default Settings

System Application – Numbering Plan 4 – External Pager is set to "777." (Range is: any available, non-conflicting directory number.)

Programming Abstract

Program the directory number for the External Pager.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program External Page Directory Number Length:

- Input **08-09-11-01**, then press [save].
- Press [chg] until the appropriate length displays.
- Press [next] to program Leading 1.

Program External Page Directory Number Leading 1, 2 or 3:

- Input **08-09-11-02**, then press [save].
- Press [chg].
- Input the new directory number leading digit(s) (see Flexible Numbering Plan for rules of Directory Numbers). Then press [save].

- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Application." Then press Enter.
- Use ↓ ↑ → ← to highlight "Numbering Plan 4." Then press Enter.
- Use ↓ ↑ → ← to highlight the database item "External Pager – Length" if the length of this code is to be changed.
- Press Enter until the appropriate length displays.

Or…

- Use ↓ ↑ → ← to highlight the directory number code that is to be changed, External Pager – Leading 1, 2 or 3.
- Press Enter.
- Input the new code and then press Enter to temporarily store this data.
  See Flexible Numbering Plan for rules of directory number application.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.

- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

FAX Detection with Automatic Transfer

The DX-80 system has a standard FAX Tone Detection capability on the fourth (4th) port of each CO Line board. (That is, CO Line ports 4, 8, 12 and 16 have the circuitry required to detect "CNG" FAX tone.) When the system is programmed to receive a facsimile transmission on one of these CO line circuits, it automatically answers the ringing line and waits for FAX tone. If the FAX CNG tone is detected the call is connected to the specified (programmed) facsimile extension.

Related Features

Single Line Telephone/Analog Device Support

CO Line Assignment

Related Programming

Call Handling - Fax Ring Time
CO Line Application - Fax Detection

Default Settings

CO Line Application – Fax Detection – Fax Destination set to "None" for CO Line directory numbers 743, 747, 751, and 755. (Range is: any analog extension port directory number.)

Programming Abstract

Program the analog extension port connected to the facsimile machine as the Fax Destination for the CO Line port(s) that will detect Fax tone.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 07-02-01, then press [save]. This advances to the first Fax circuit Destination screen (circuit 743).
- Press [chg].
- Input the directory number of the analog port that is connected to the fax machine that will answer fax calls answered on this line.
- Press [save].
- Press [next] to program the second fax circuit… through to the fourth fax circuit,

Or…

- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "CO Line Application." Then press Enter.
- Use ↓↑→← to highlight "Fax Detection." Then press Enter.
- Use ↓↑→← to highlight the database item "FAX Destination" for the CO Line port that will receive Facsimile transmissions.
- Press Enter.
- Input the Analog port directory number that is connected to the FAX machine, then press Enter.
- If other CO Line ports will also receive FAX transmissions, input that data in the same manner.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Feature Button Disable

FEATURE

This extension option will disable use of the feature button at that extension. This option can be helpful when the telephone is located in an environment where it can easily be tampered with, or where user changes are not desirable.

Related Features

All features accessed using the FEATURE button.

Related Programming

Extension - Feature Button Disable

Default Settings

Extension – FTR BTN Disable is set to "N." (Range is: Y/N.)

Programming Abstract

Program the extension(s) for Feature Button Disable if they are to be restricted from using any system feature codes.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **01-101~156-16**, then press [show].
- Press [chg] until the appropriate value displays for the selected extension (101~156).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Extension." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 3." Then press Enter.
- Use ↓ ↑ → ← to highlight the database item "FTR. BTN Disable" for the extension to be changed.
- Press Enter until the appropriate value displays.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Feature Key Reset

FEATURE 5 JKL 8 TUV

This feature is used to reset all Flexible Feature buttons to default settings. Reference the Flexible Feature Button map in the Overview – Specifications section of this manual to review the layout of these feature keys.

Related Features

Extension Password

Flexible Feature Button Programming

Operation

1. While the extension is idle (no call activity), press FEATURE 5 JKL 8 TUV. The display prompts for the password"

```
PSWD  :
 bksp show chg
```

2. Enter the extension password then press [show]. The display prompts for confirmation:

```
FTR KEY RESET
      go
```

3. Press [**go**]. The operation is complete and you hear the confirmation tone.

Feature / Directory Number Lookup

FEATURE # 5 JKL

The DX-80 system has many features and codes. At times it may be difficult to remember the code for the necessary feature. This feature code directory was implemented to aid in accessing the many features of the DX-80.

You can use the Feature/Directory Number Lookup to find the directory number and/or Feature Code and/or Suffix Codes required to operate the various system features.

Related Features

Flexible System Numbering Plan

All feature access codes

Operation

1. While the telephone is idle (no call activity), press FEATURE # 5 JKL. The display shows

```
DIR#/CODE LOOKUP
 dir  ftr suffix
```

2. To find a system Directory Number, press [**dir**]. The first screen of directory number listings displays. If you don't see the system resource listed press [**next**] until the resource displays, then press that interactive LCD button. (For example, to show the directory number assigned to CO Line Groups, press [**co gp**].
3. To find a system Feature Access Code, press [**ftr**]. Features are listed abbreviated and alphabetically. (Note: All codes in this list require that the FEATURE button be pressed preceding the code.)
4. To find a Suffix Code, press [**suffix**]. The list of digits dialed after system resource directory numbers displays.
5. Use the [**back**] and [**next**] buttons to move through the display categories.
6. Use the Hold button to return to a previous menu level.
7. Go off-hook them on-hook (or press the ON/OFF button twice) to exit Feature/Directory Number Lookup.

List of Codes

Directory Numbers:

Feature		Directory Number(s)
Co gp (CO Line Group)	1	9
	2~8	800~806
Page (Paging)	Tenant	400
	Group 1~8	401~408
	EXT PAGE (External)	777
Hunt	Hunt/UCD Group 1~24	410~433
Pickup	Pickup Group 1~8	440~447
Music	Music Channel 1, 2	771, 772
Bell	Loud Bell/E.P./M.S.	779
Mmcnf	Meet Me Conf. 1~8	390~397
Vir	Virtual Numbers 1-30	700~729
Spd	Speed Dial – Individual	470~499
	Speed Dial – System(common)	500~699
Note: These can be changed in programming.		

Feature Access Codes:

Feature	Enable Code	Disable Code
Agent Log Off	[FEATURE] 91	[FEATURE] *91
Alarm Clock	[FEATURE] 92	[FEATURE] *92
Alarm Key	[FEATURE] 62	N/A
All Forward	[FEATURE] 2	[FEATURE] 2
Attendant Administration	[FEATURE] #0	Password: 9999
Auto Hold	[FEATURE] 94	[FEATURE] *94
Auto Line Select	[FEATURE] 95	[FEATURE] *95
Auto Redial	[FEATURE] 78	N/A
Busy Forward	[FEATURE] 2	[FEATURE] 2
Busy Ring Allow	[FEATURE] #2	[FEATURE] #2
Call Forward	[FEATURE] 2	[FEATURE] 2
CBCK (Callback) Delete	[FEATURE] ##	[FEATURE] ##
CID Table	[FEATURE] 6#	Password: 9999
Conference	[FEATURE] 60	[FEATURE] 60
DB (Database) Programming	[FEATURE] #*	N/A
Default Set	[FEATURE] 69	N/A
Distinctive Ringing	[FEATURE] #7	N/A
Do Not Disturb	[FEATURE] 4	[FEATURE] 4
DSS Key Programming	[FEATURE] #4	N/A
External Call Forward	[FEATURE] 2	[FEATURE] 2
Feature Status	[FEATURE] #8	N/A
Flash	[FEATURE] 3	N/A
Follow Call Forward – From	[FEATURE] 2	[FEATURE] 2
Follow Call Forward – To	[FEATURE] 2	N/A
Forced Release (Conference)	[FEATURE] 74	N/A

Feature	Enable Code	Disable Code
Feature Code Lookup	[FEATURE] #5	N/A
Feature Key Programming	[FEATURE] #3	N/A
Feature Key Reset	[FEATURE] 58	Password: 9999
Get Held CO Line	[FEATURE] 7*	N/A
Headset Mode	[FEATURE] 9#	[FEATURE] *9#
Hidden Code	[FEATURE] 61	N/A
Hot Key	[FEATURE] #6	[FEATURE] #6
Hotline	[FEATURE] 9*	[FEATURE] *9*
ICM (Intercom) Key	[FEATURE] 65	N/A
ICM Mode (HF/Private/Ring)	[FEATURE] 98	[FEATURE] 98
Last # Redial	[FEATURE] 8	N/A
Lock Phone	[FEATURE] 97	Password: 9999
Memo Pad	[FEATURE] 5*	N/A
MSG (Message) Waiting	[FEATURE] 96	N/A
Mute Key	[FEATURE] 76	N/A
No Answer Call Forward	[FEATURE] 2	[FEATURE] 2
Paging Answer	[FEATURE] 59	N/A
Paging Receive	[FEATURE] #9	[FEATURE] #9
Park Call	[FEATURE] 73	N/A
Pause	[FEATURE] 70	N/A
Private Talk (Conference)	[FEATURE] 57	N/A
Release Key	[FEATURE] 52	N/A
Ring Mode (System Service) **Note:** Attendant station only	[FEATURE] 63	Password: 9999
Room Status	[FEATURE] 7#	N/A
Saved # Redial	[FEATURE] 51	N/A
Speed Dialing	[FEATURE] 1	N/A
Status MSG (Message)	[FEATURE] 90	[FEATURE] *90
Touch Tone	[FEATURE] #1	[FEATURE] #1
Unsupervised Conference	[FEATURE] 77	N/A
Voice MW Key	[FEATURE] 64	N/A
Voice Record	[FEATURE] 67	N/A

Suffix Codes:

Feature	Suffix Code
ICM Voice / Ring	*
DND Override	3
Camp On	4
Callback	#
Call Pickup	6
Intrusion	8
MSG (Message) Waiting	9
ICM (Intercom) OHVA	0
Monitor	1
Note: These can be changed.	

Flash – Analog Port (SLT) Flash Recognition

Flash refers to the command issued at an analog device to invoke system features. Flash is the momentary operation of the hook-switch at an analog device. Conversely, the on-hook command at an analog device signifies an on-hook (disconnect/hang-up) request.

The momentary operation of the hook-switch at the analog device is deciphered by the DX-80 system in such a way that the previous call in progress is held, or placed in a status of transfer awaiting further instructions from the user.

Flash Recognition is the specific timing associated to a user flash request. The DX-80 must be setup to decipher a flash command from an on-hook command where the user may go on-hook then immediately off-hook again to place a call.

There are two settings in the flash recognition timing: the Start Time and the End Time.

Related Features

Transfer – SLT (Single Line Telephones)
Call Park – SLT
Hold – Common (System) & I-Hold Indication

Related Programming

Call Handling – Category 2 – SLT Hook Flash Start
Call Handling – Category 2 – SLT Hook Flash End

Conditions

a) The Start Time can be set very low to detect very fast operation of the hook-switch but care should be taken when using low Start settings since the timing may allow line noise to trigger a flash command.
b) The End Time can be set very high to detect very slow hook-flash operations but care should be taken when using high End settings since the timing may not allow the triggering of On-Hook commands in an acceptable period for the user.
c) Use the default Start and End timing wherever possible.

Default Settings

Call Handling – Category 2 – SLT Hook Flash Start is set to “200.” (Range is: 60, 100-1400 milliseconds.)
Call Handling – Category 2 – SLT Hook Flash End is set to “1000,” COS 1-7 are set to “No.” (Range is: 100-1500 milliseconds.)

Programming Abstract

Program the necessary Start and End detection period to assure accurate hook-flash detection at analog devices. (Analog devices typically send hook flash commands at 600-900 milliseconds, so a Start time of “200” and an End time of 1000 is usually sufficient.)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code [FEATURE # * TONE] and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **03-14**, then press [save]. This advances to the SLT Hook-flash programming.
- Press [show]. This advances to the **Start** screen.
- Press [chg] to change the Start Time to detect SLT hook-flash.
- Press [next] to advance to the **End** screen.
- Press [chg] to change the End Time to stop detection of SLT hook-flash.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing [Enter].
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press [Enter].
- Use [↓][↑][→][←] to highlight "Call Handling." Then press [Enter].
- Use [↓][↑][→][←] to highlight "Category 2." Then press [Enter].
- Use [↓][↑][→][←] to highlight "SLT Hook Flash – Start" or "…End."
- Press [Enter] until the appropriate timing displays.
- Continue making other programming changes as required.
- When you have completed all changes, press the [Esc] (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press [Esc] (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Flash – CO Line

FEATURE 3 DEF

Flash – CO Line is a programmed setting that will determine what flash timing will be presented to the telephone company central office when the user issues a Hook-Flash command while connected to a CO Line. This feature is a requirement when the DX-80 is installed "behind" Centrex® or a PBX system. In these two cases, the Flash feature code should be programmed onto a Flexible Feature Button for easy access.

If Call Waiting service is provided you can use the Flash feature to answer a second incoming call while connected to another outside party.

Related Features

Speed Dial (System and Station)
Last Number Redial
Memo Pad
Automatic Redial

Related Programming

Call Handling – CO Flash Time

Operation

While connected to a CO Line, press FEATURE 3 DEF. The programmed hook-flash is invoked on the connected CO Line circuit.

Analog Ports (Single Line Telephones) – Flash

1. While connected on a call, press {FLASH} (hook-switch flash).
2. Dial # 3 DEF.

Analog Ports (Single Line Telephones) – Call Brokering

1. While connected on a call, press {FLASH} (hook-switch flash).
2. Dial the CO Line code, wait for a dial tone, and then dial the second number.
3. To switch back to the first call, press {FLASH} and then dial 2 ABC.
4. To disconnect the current call, press {FLASH} and then dial 1.

Conditions

a) The Flash code may be stored in any speed dial location.
b) The Flash code may be stored in the Last Number Redial buffer. When you activate redial, a Digital Speakerphone display will show a "/" to indicate the Flash code.
c) The Flash time is programmable from 100ms to 1500ms in increments of 100ms (1/10th of a second).
d) At a Digital Speakerphone, when the flash code is dialed "CO Flash" will be displayed temporarily.
e) Single line extensions must generate a hook-flash on the analog port and then dial # 3 DEF to generate a hook-flash on a CO Line.

Default Settings

Call Handling – Category 1 – CO Flash Time is set to "0.8 seconds." (Range is: 0.1 – 3.0 seconds.)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

- Input 03-02, then press [save]. This advances to CO FLASH programming.
- Press [chg] until the appropriate CO Line hook-flash timing displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight "Category 1." Then press Enter.
- Use ↓↑→← to highlight "CO Flash."
- Press Enter until the appropriate CO Line hook-flash timing displays.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Flash – PBX Line

FEATURE 3 DEF

Flash – PBX Line is a programmed setting that will determine what flash timing will be presented to the host telephone system when the DX-80 is installed as a subordinate system. This feature is critical to perform accurate host-system functions like PBX call transfer. When used "behind" a PBX, the DX-80 system extensions should have the Flash feature code programmed onto a Flexible Feature Button for easy access.

Related Features

Speed Dial (System and Station)
Last Number Redial
Memo Pad
Automatic Redial

Related Programming

Call Handling – PBX Flash Time

Operation

While connected to a PBX Line, press FEATURE 3 DEF. The programmed hook-flash is invoked on the connected PBX circuit.

Conditions

a) The Flash code may be stored in any speed dial location.
b) The Flash code may be stored in the Last Number Redial buffer. When you activate redial, a Digital Speakerphone display will show a "/" to indicate the Flash code.
c) The Flash time is programmable from 100ms to 1500ms in increments of 100ms (1/10th of a second).
d) At a Digital Speakerphone, when the flash code is dialed "PBX Flash" will be displayed temporarily.
e) Single line extensions must generate a hook-flash on the analog port, then dial FEATURE 3 DEF to generate a hook-flash on a PBX Line.

Default Settings

Call Handling – PBX Flash Time is set at "0.6." (Range is: 0.1-3.0 seconds.)

Programming Abstract

Program the required PBX Flash Time (applies to all CO Line of Type "PBX.")

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-03, then press [save]. This advances to PBX Flash programming.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Call Handling." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use ↓ ↑ → ← to highlight "PBX Flash."
- Press Enter until the appropriate value displays.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.

- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Flexible Feature Button Inquiry

FEATURE # 3 DEF

You may review the programming for flexible feature buttons at an idle Digital Speakerphone. In order to review the programming, you must dial the Flexible Button Programming mode.

Related Features

Flexible Feature Button Programming Feature Look-up

Related Programming

PC-DBA - Extension Application - Feature Key Copy, DSS Copy

Conditions

a) Buttons without feature programming will display "AVAILABLE KEY."
b) Refer to the digital speakerphone button maps in the Overview – Configuration section of this manual for default button assignments.

Operation

1. Press FEATURE # 3 DEF. The display will show:

   PRESS FTR KEY

2. Press the Flexible Feature Button to view its contents (code). For example, press button 1 (lower left).

   740
   show chg

3. Press [**show**]. The name/designation of the feature/directory number displays.

   CO LN :740

4. Continue checking other buttons for their programmed content or lift/replace handset to exit Flexible Feature Button Inquiry.

Flexible Feature Button Programming

FEATURE # 3 DEF

Digital Speakerphones have thirty (30) dual-colored Flexible (Programmable) Feature Buttons. All system feature codes (30 max.) may be stored on available Feature Buttons for one-button operation. Certain programmed feature buttons will light when activated (DND, Call Forward, DSS/BLF, etc.), while others such as Call Pick-Up, Background Music, Last Number Redial, do not.

Features are separated into two distinct categories for programming onto Flexible Buttons: Directory Numbers or Feature Codes.

Related Features

Feature Look-up
DSS Button Programming
Feature Button Disable
Extension – Line Assignment

Related Programming

System Application – Feature Key Copy, DSS Copy
Extension – Feature Button Disable
PC-DBA – Feature Key Programming

Operation

1. While the extension is idle, press FEATURE # 3 DEF. The display indicates that you are in Feature Key programming mode by prompting you to press a key:

   ```
   PRESS FTR KEY
   ```

2. Press the Flexible Feature Button that you wish to program. The current programming displays:

   ```
   F98____
         show chg
   ```

3. Press [**chg**].

   ```
   SELECT FUNCTION
    dir feat
   ```

4. To program the button, you must know the code type. It is either a directory number or a Feature Code. (In general, directory numbers are DX-80 system resources that are designated dialing codes in the system such as extensions and Page Zones. Feature Codes are those features that extension might invoke.) If you are unsure what type of code is to be programmed exit Flexible Feature Button Programming and use Feature/Directory Number Lookup to locate the feature and code you wish to program.

5. To program a directory number press [**dir**].

   ```
   DIR NUMBER :
    bksp save chg
   ```

6. Input the directory number and then press [**save**]. If you make a mistake, use [**bksp**] and [**chg**] to re-enter the number.

7. To program a feature code press [**ftr**].

   ```
   FTR CODE:
    bksp save chg
   ```

8. Input the feature code FEATURE 6 MNO # (for CID Table review), then press [**save**].

9. Continue programming other Flexible Feature Buttons or lift/replace handset to exit this programming.

Conditions

a) If you dial an invalid code you will hear error tone and the Digital Speakerphone display will show “CODE UNAVAILABLE.”

b) In some cases a user may program a feature button for a specific CO line although access is restricted to that line via database programming. In this situation, the telephone is still governed by database programming and would still be unable to access the CO line if restricted.

c) Valid feature codes must be in the form of either “Fn” or “Fnn” where “F” is the feature button and “n” is either a single-digit or two-digit code, including asterisk (*) and pound (#) dialed from the dial pad.

d) Any feature button programmed with a code previously assigned to a different feature button will cause the previously programmed feature button to become unassigned.

e) Programmable Feature Buttons cannot be programmed for CO Line Group operation when the system is configured for “Key” system operation.

f) Flexible Feature Buttons can be cleared of any feature code/directory number by pressing [**save**] before entering a code/number.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "Feature Key Programming." Then press Enter.

Program Extension Feature Buttons:

- Use ↓↑→← to highlight "EXT's Feature Keys." Then press Enter.
- Input the extension directory number then press Enter.
- Use ↓↑→← to highlight the Flexible Feature Button that you wish to program then press Enter.
- Choose DIR No. or FTR Access Key. (You also choose "NULL" which means nothing – to disable the key operation.) Then press Enter.
- Input the Feature Access Code or Directory number. Then press Enter.
- Continue making other programming changes as required for this extension.
- When you have completed all changes, press the Esc (escape) key to exit button programming for this extension. This returns you to the previous menu level where you may enter another extension number for which changes are to be made. Input the next extension number and press Enter.

Or…

- Press the Esc (escape) key again. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
- Press "**N**" to abort changes and leave all data unchanged.
- Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
- Press "**N**" to abort changes and leave all data unchanged.
- Press "**Y**" (yes) to continue with the save operation.

Program DSS Console Feature Buttons:

- Use ↓↑→← to highlight "DSS Set." Then press Enter.
- Input the DSS Console number (1~12). Then press Enter.
- Use ↓↑→← to highlight the Flexible Feature Button that you wish to program then press Enter.
- Choose the DIR No. or NULL (to disable the key operation.) (It is not possible to program Feature Access Codes on the DSS Console.) Then press Enter.
- Input the Directory number. Then press Enter.
- Continue making other programming changes as required for this extension.

- When you have completed all changes, press the Esc (escape) key to exit button programming for this extension. This returns you to the previous menu level where you may enter another DSS Console for which changes are to be made. Input the next DSS number and press Enter.

Or…

- Press the Esc (escape) key again. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Flexible Numbering Plan

The DX-80 system Numbering Plan refers to the structure of dialed access to the various resources that are part of the system. A primary example is the extension numbers of the system. When one extension calls another, the numbering plan is the mechanism that facilitates this call. For this reason the Numbering Plan is often referred to as the system Directory Numbers.

The DX-80 allows for a very flexible configuration of numbering for the various system resources. Resources are defined primarily as "port" oriented components of the system. A numbering structure specific to the application can be accommodated. The system resources listed under "Related Features" can be assigned directory numbers that are customized for the installation.

Although the directory number structure flexibility is provided primarily for system port resources, some feature access also can be customized. (E.g., Account Code, Paging Groups, and Speed Dial.) Flexibility in numbering includes: Length of codes (to access the associated resource) and Leading Digit/Digits assigned to each resource.

As codes are assigned, the system checks for conflicts and protects against improper programming of resource Directory Numbers. To successfully implement changes to the default (factory programmed) Directory Number Plan, a new code cannot be input if it is in use elsewhere until it has been deleted from use in the previous assignment.

Related Features

Account Code directory number
Operator Code
CO Line Group directory numbers
Extension numbers
Paging Groups
Universal Call Distribution Groups
Meet Me Conference directory numbers
Pickup Groups
Speed Dial (Individual and Common)
Music Sources
Loud Bell Control
External Pager
Virtual Numbers

Related Programming

System Application - Numbering Plan

Default Settings

Note 1: Range for "Length" for all items is 1-4.

Note 2: Range for all "Leading" items is any available, non-conflicting directory number.

Flexible Numbering Plan – CO Line Group Defaults										
Length	Leading	Length	Leading	Length	Leading	Length	Leading	Length	Leading	Resulting Code
1	1	2	2	3	3	4	4	5	5	
1	9	3	80	Null	Null	Null	Null	Null	Null	9,800-806

Flexible Numbering Plan – Directory Number Defaults										
	Length	Leading Digit(s)								Resulting Code
		1	2	3	4	5	6	7	8	
Operator Code	1	0	na							0
Account Code	2	79	na							79
Extension	3	1	Null	Null	Null	Null	Null	Null	Null	100-199
Ext. Page Group	3	40	Null	Null	na					400-408
Hunt/UCD Groups	3	41	42	43	na					410-433
Pickup Groups	3	44	Null	Null	na					440-447
Individual Speed Dial	3	47	48	49	na					470-499
CO Line DIR No.	3	74	75	Null	na					740-755
Music Source	3	771	772	Null	na					771,772
Loud Bell Control	3	779	Null	Null	na					779
External Pager	3	777	Null	Null	na					777
Virtual Number	3	70	71	72	na					700-729
Meet Me Conference	3	39	Null	Null	na					390-397

Programming Abstract

- Program the Directory Number Length for each of the system resources.
- Program the digits for the selected resource. Special consideration should be taken when applying digits to resources. Any resource may be assigned all specific digits or only the first digit(s) based on the Length total for each resource and those Leading digits assigned.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **08-09-01**, then press [save]. This advances to Numbering Plan – CO Group programming.
- Press [show] to enter into CO Group numbering plan programming.

Or…

- Press [next] to advance to the next numbering plan item.
- When the numbering plan program to change displays, press [show].
  - The first parameter is "Length." If this is to be changed press [chg] until the appropriate length for this code displays.

Or…

- Press [next] until the Leading digit to be programmed displays.
- Press [chg] to allow an entry into this item.
- Input the leading digit(s) to be assigned to this system resource.
- Press [save].
- Press [next] to advance to the next Leading Digit to program or until the next Numbering Plan item to be changed displays.

- Repeat the steps above for all Numbering Plan items to be changed.

Reference the tables below for information on Numbering Plan capabilities.

Pickup Group Directory Number Examples

	Length	Leading Digit(s)			Resulting Code	Comments
		1	2	3		
A	2	4	Null	Null	40-47	1. Users dial 40-47 for Group Pickup. 2. The digit “4” is unavailable as the first digit for any other directory number use.
B	2	44	45	Null	44,45	1. Users dial 44 or 45 for Group Pickup. 2. There are only two Group Pickup groups. 3. Digits 40-43, 46-49 are available as the first two digits for other numbering plan requirements.
C	3	44	Null	Null	440-447	1. Users dial 440-447 for Group Pickup. 2. Digits 40-43, 45-49 are available as the first two digits for other numbering plan requirements.

Extension Directory Number Examples											
	Length	Leading Digit(s)								Resulting Code	Comments
		1	2	3	4	5	6	7	8		
A	4	1	Null	Null	Null	Null	Null	Null	Null	1000-1999	1. Users dial 1000-1999 when dialing other extensions. 2. The digit "1" is unavailable as the first digit for any other directory number use.
B	3	1	Null	Null	Null	Null	Null	Null	Null	100-199	1. Users dial 100-199 when dialing other extensions. 2. The digit "1" is unavailable as the first digit for any other directory number use.
C	2	1	2	3	Null	Null	Null	Null	Null	10-39	1. Users dial 10-39 when dialing other extensions. 2. Digits 1, 2 & 3 are unavailable as the first digit for any other directory number use.
D	2	10	11	12	13	14	15	16	17	11-17	1. Users dial 11-17 when dialing other extensions. 2. The digit "1" is unavailable as the first digit for any other numbering plan requirements. 3. Only eight extensions will have intercom numbers.

- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Application." Then press Enter.

Program EXAMPLE: Group Pickup Directory numbers:

- Use ↓ ↑ → ← to highlight "Numbering Plan 3." Then press Enter.
- Use ↓ ↑ → ← to highlight the database item to be changed: "Length," "Leading 1," "Leading 2," or "Leading 3."
- Press Enter to change the data item value.
  - For "Length," press Enter until the appropriate length of this directory number displays.
  - For Leading 1, 2, and 3: input the required code then press Enter.
- Continue programming other database items as required.

- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Make other directory number changes in the same manner for each system resource directory number to be changed.
- Exit PC-DBA programming when finished.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Forced Intercom Call Forward

FEATURE 4 GHI

Tone ringing intercom calls can be immediately forwarded to the attendant by pressing the DND button.

Related Features

Do Not Disturb
Call Forward
Intercom Mode Selection

Operation

1. When your telephone is set to Tone Ring and another station is calling you: The telephone will display:

   STA xx CALLING

2. Press FEATURE 4 GHI. The display will show:

   DO NOT DISTURB

3. The ring is discontinued and the call is sent to the programmed attendant.
   Your extension remains in Do Not Disturb until deactivated.

Conditions

a) The attendant assigned extension cannot invoke Forced Intercom Call Forward.
b) When Forced Intercom Call Forward is activated, the calling party connection is an intercom call to the attendant extension.
c) You cannot activate Forced Intercom Call Forward if another Call Forward mode is already enabled.

Forced Intercom Tone Ring

* TONE

In certain conditions a Voice Announce call may not be heard at the receiving extension (usually because background noise is high or the speaker volume setting has been minimized for a prior call). Forced Intercom Tone Ringing allows the intercom call initiator to cause the called telephone to ring. After a Voice Announce connection has been established to an extension, you may change the alert signal at the called extension from Voice Announce to Tone Ring.

Related Features

Intercom Mode Selection

Intercom - Non Blocking

Operation

1. Establish an intercom call to an extension in Voice Announce mode (Hands-free or Private). Your telephone will display:

```
VOICE CALL  xx
     msg
```

2. Press *TONE to change the alert signal at the called extension from Voice Announce to Tone Ringing. Your telephone will display:

```
CALLING STA 10
  cbck  msg
```

3. A Tone Ringing alert signal is sent and continues at the called extension until answered.

4. If your call remains unanswered, you may dial *TONE again to return to Voice Call Announce mode.

Analog Ports (Single Line Telephones)

Dial *TONE to tone ring an extension in Voice Announce mode.

Conditions

a) It is not possible to force an extension from Tone Ring mode to Voice Announce mode if Tone Ring is the mode they have selected.

b) If you want to leave a Callback request at a called extension that doesn't answer, the alert signal must be set for Tone Ringing.

Headset Jack

All Digital Speakerphones have a standard 2.5 millimeter headset jack. This headset jack facilitates industry-standard headset equipped with this jack type. Headset jack adapters are often available from headset manufacturers to adapt your headset to the 2.5 mm jack.

A headset connected to the headset jack can be operated as an integral component of the DX-80 digital speakerphone. Refer to Headset Mode for operation.

Related Features

Headset Mode

Headset Mode

FEATURE 9WXYZ #

All Digital Speakerphones have a standard 2.5 millimeter headset jack. When Headset Mode is selected (either by pressing a preprogrammed headset feature key or dialing the Headset Mode code), the On/Off button is used to activate/deactivate the headset.

While in Headset Mode, when the On/Off button is pressed, the extension status changes to an off-hook condition with the headset active. When the On/Off button is pressed again, the extension status returns to idle (disconnecting any call in progress.)

Related Features

Flexible Feature Button Programming

Operation – Activate Headset Mode

While the telephone is idle, press FEATURE 9WXYZ # or press the Flexible Feature button programmed with the Headset Mode code. The display indicates the new status:

HEADSET ENABLED

Operation – Deactivate Headset Mode

While the telephone is idle, press FEATURE *TONE 9WXYZ # or press the Flexible Feature button programmed with the Headset Mode code. The display indicates the new status:

HEADSET DISABLED

Operation – Use the Headset to Place a Call

1. While the telephone is idle, press the On/Off button, a DSS button or CO Line button. The On/Off button LED flashes to indicate that the headset is active.
2. Intercom Dial Tone, CO Line dial tone or Intercom ring-back tone is heard depending on the function invoked.
3. Press the On/Off button again to disconnect the current call.

Operation – Use the Headset to Answer a Call

1. While the telephone is ringing, press the On/Off button. The On/Off button LED flashes to indicate that the headset is active.
2. The ringing call is answered and connected to the headset.
3. Press the On/Off button again to disconnect the current call.

Conditions

a) You may assign a feature button with the Headset feature code and use the button to turn the headset on and off. When the headset is enabled that button will light.
b) While using the headset, you may pick up Intercom Voice calls by pressing the On/Off button.
c) Incoming CO line calls may be answered by pressing the On/Off button (for automatic priority ring selection) or by pressing the specific CO line button.
d) Other features like background music and muted ring continue to operate in the same manner while you are on-hook.
e) Non-amplified headsets may be powered directly from the key telephone. In most cases this interface permits the key telephone to control the Volume Up/Down and Mute features. Some headsets may require the use of the headset adapter keys to adjust the volume, mute and other headset functions.
f) Pressing the On/Off button will disconnect calls when the Headset mode is active.

Hidden Codes

FEATURE 6MNO 1

A four-digit code may be stored for dialing by one-button operation. The Hidden Code feature is reserved to use with a Flexible Feature button. (It must be stored on a Flexible Feature button to operate.) This feature is typically used with voice mail systems (both internal and external). When the voice mail mailbox is reached, the Hidden Code button can be pressed to dial the stored code.

Related Features

Integrated Voice Mail
Flexible Feature Button Programming

Operation – Storing the Code

1. While the telephone is idle, access Flexible Feature Button Programming (FEATURE # 3 DEF) then press the feature button to be stored with your Hidden Code.

```
AVAILABLE KEY
          chg
```

2. Press [chg].

```
SELECT FUNCTION
 dir  feat
```

3. Press [feat].

```
FTR CODE:_
 bksp save chg
```

4. Press FEATURE 6 MNO 1 + {the four-digit code to store}.
5. Press [save].
6. Exit Flexible Feature Button Programming.

Operation – Using the Hidden Code

1. Access the voice mail system (either the DX-80 Voice or an external voice mail system).
2. When you hear the prompt to enter your password, press the Hidden Code button.

Conditions

The Hidden Code feature can only be used when stored on a Flexible Feature button.

Hold – Common (System) & I-Hold Indication

You may place any CO line on System Hold by pressing the Hold button. When you place a line on System Hold, the green lamp for that line will flash at the I-Hold rate. This system-hold line will flash the red lamp at all other extensions.

I-Hold Indication allows you to easily distinguish between a call you placed on hold at your telephone and calls placed on hold at other telephones. When you place a call on System Hold, the associated line lamp will flash at the System Hold rate using the green lamp to indicate that this is your holding line. The same held CO line at other extensions will flash at the System Hold rate using the red lamp.

Related Features

Call Transfer
Hold Abandon
Hold Reminder

Related Programming

Call Handling - Hold Recall, Hold Reminder, Ex_Hold Time

Operation

1. While on a line, the green lamp for that line is I-Use flashing (double wink rate).
2. Press the Hold button. The green lamp now flashes at a slow rate and the call is placed on System Hold.

Analog Ports (Single Line Telephones)

1. While on a line, press {FLASH} (hook-switch flash).
2. Hang up. The line is placed on System Hold.

3. To retrieve a call on hold, press {FLASH} (hook-switch flash).

Conditions

a) Pressing Hold will place a conference on Exclusive Hold if you are the controlling party and you temporarily exit to add another party.
b) When a conference call is placed on Hold, the steady lamp indication at the other extension(s) remains steady (follows Exclusive Hold functions).
c) Any party who is placed on Hold will hear music only if available through the external music source connection.
d) Calls placed on Exclusive (private) Hold, which have exceeded the Exclusive Hold programmed time, and calls recalling from a CO line transfer, will be placed on System Hold automatically.
e) There is a distinctive flash rate for a CO line that is on System Hold.

Default Settings

Call Handling – Hold Reminder is set at “60” seconds.
(Range is: 0-90 seconds, “0” disables the Hold Reminder function.)
Call Handling – SLT Hold Recall is set at “0.5” minutes. (Range is 0-5.0 minutes.)
Call Handling – EKT Hold Recall is set at “0.5” minutes. (Range is 0-5.0 minutes.)

Programming Abstract

- Program the Hold Reminder Time.
- Program the Single Line Telephone Hold Recall Time.
- Program the Digital Extension

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Hold Reminder:

- Input **03-04**, then press [save]. This advances to Hold Reminder programming.
- Press [chg] until the appropriate Hold Reminder Time displays.
- Press the Volume button (up or down) to return to the DB Select screen.

Program SLT Hold Recall:

- Input **03-12**, then press [save]. This advances to SLT Hold Recall programming.
- Press [chg] until the appropriate SLT Hold Recall time displays.
- Press the Volume button (up or down) to return to the DB Select screen.

Program Executive (Display) Speakerphone Hold Recall:

- Input **03-13**, then press [save]. This advances to EKT Hold Recall programming.
- Press [chg] until the appropriate SLT Hold Recall time displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight "Category 1." Then press Enter.
- Use ↓↑→← to highlight the database item "**Hold Reminder**" to change the interval of this tone reminder.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Use ↓↑→← to highlight the database item "**Hold Recall – SLT**" to change the time that calls placed on hold at analog devices remain on hold before ringing-back to the extension that placed them on hold.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Use ↓↑→← to highlight the database item "Hold Recall – DEKT" to change the time that calls placed on hold at Digital Speakerphones remain on hold before ringing-back to the extension that placed them on hold.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Hold – Exclusive

FEATURE HOLD

When using the feature button and the hold button together, you may place an outside call on private/exclusive hold. The held line will appear in use at other extensions.

Related Features

Hold Reminder
Hold - Common (System)
Hold - System
Call Handling - Hold Reminder

Related Programming

Call Handling - Ex_Hold Time, Hold Recall, Hold Reminder

Operation

While connected to a CO Line, press FEATURE and then press the Hold button.

Conditions

a) When you place a CO line call on Exclusive Hold, the green lamp for that line at your telephone will flash fast and the red lamp will light steady at other extensions for that CO line.

b) A CO line call will be placed on System Hold after the Exclusive Hold time expires. You will hear a tone alerting you that the timer has expired and the hold condition for that CO line changes to System Hold. The green lamp at your telephone will flash slowly and the red lamp at other extensions will begin to flash slowly.

c) Exclusive Hold is used only for CO line calls.

d) The Exclusive Hold duration is programmable from 1-8 minutes in the Database Programming.

Default Settings

Call Handling – Hold Reminder is set at "60" seconds.
(Range is: 0-90 seconds, "0" disables the reminder Function.)
Call Handling – Exclusive Hold Time is set at "3" minutes.
(Range is 0-8 minutes. "0" disables Exclusive Hold Recall.)

Programming Abstract

- Program the Hold Reminder Time. (See Hold Reminder.)
- Program the Exclusive Hold Time.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-08, then press [save]. This advances to EX_HOLD TIME programming.
  - Press [chg] until the appropriate Exclusive Hold Time displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Call Handling." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use ↓ ↑ → ← to highlight "Ex_Hold Time."
- Press Enter until the appropriate Exclusive Hold Time displays.
- Continue making other programming changes as required.

- When you have completed all changes, press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Hold Abandon

Each CO line has a programming option that directs the system to monitor distant party disconnect. This is a useful *network* feature in busy office environments where the inside party accidentally presses the Hold, ICM or DSS button while expecting the outside line conversation to be concluded. Anytime the system detects a disconnect signal from the Central Office, an existing Hold condition will be released, freeing that line for future inbound/outbound traffic.

Related Features

Hold - Common (System)
CO Line Loop Supervision (Talk/Hold Abandon)
Hold – Exclusive
Transfer

Related Programming

CO Line - Call Abandon
Call Handling - Hold Abandon Time

Conditions

a) All types of Hold (e.g., System Hold, Exclusive Hold, and Conference Hold) are subject to the Hold Abandon feature.
b) Certain Central Offices do not provide loop supervision, these line should be marked Call Abandon = "N."
c) At default Call abandon is enabled for all CO lines.
d) If the outside (held party) disconnects, the system will automatically release the held CO line.
e) The CO line must have the loop supervision interrupt signal from the local carrier for Hold Abandon to function.

Default Settings

Call Handling – Category 1 – Hold Abandon Time is set to "600." (Range is: 50-1000 milliseconds.)

Programming Abstract

- Program the required Hold Abandon Time.
- Program CO Lines for Call Abandon (see CO Line Loop Supervision).

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **03-42**, then press [save]. This advances to Hold Abandon programming.
- Press [chg].
- Input the Hold Abandon Time to detect (50-1000ms)and then press [save]. The new time is stored.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Call Handling." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use Page Up Page Down (Page Up or Page Down) to select Category 1 – screen two [2/2].
- Use ↓ ↑ → ← to highlight "Hold Abandon Time."
- Press Enter.
- Input the new value (in increments of 50ms), then press Enter.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Hold Reminder

The system provides a programmable timer to remind you that a call has been left on System or Exclusive Hold. When enabled, you will hear one ring tone repeated each time the selected hold time expires.

Related Features

Hold (System/Exclusive)

Related Programming

Call Handling – Hold Reminder

Conditions

a) Hold Reminder applies to both intercom and CO line calls.
b) Hold Reminder applies to CO line calls that are on System Hold or Exclusive Hold.

Default Settings

Call Handling – Hold Reminder is set at "60" seconds.
(Range is: 0-90 seconds, "0" disables the reminder Function.)

Programming Abstract

Program the Hold Reminder Time.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **03-07**, then press [save]. This advances to Hold Reminder programming.
- Press [chg] until the appropriate Hold Reminder Time displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Call Handling." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1." Then press Enter.
- Use ↓ ↑ → ← to highlight the database item "Hold Reminder" to change the interval of this tone reminder.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Continue making other programming changes as required.

- When you have completed all changes, press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Holding Call Answer – Select

HOLD

Holding Call Answer allows a Digital extension user to place and retrieve calls on and off of hold by simply pressing the Hold button. When multiple calls are holding at an extension, Holding Call Answer will access the CO line that has been holding for the longest period of time while placing the current call on hold.

Holding Call Answer works for all CO lines regardless of the extension CO line button programming. It is possible to handle calls that do not appear (no button) at an extension via Holding Call Answer.

Related Features

Hold - Common (System)
Hold - Exclusive
CO Line Assignment

Related Programming

CO Line - Call Abandon
Call Handling - Call Abandon Time, Hold Recall, Ex_Hold Time

Operation

1. When one or multiple calls are holding at your extension, press the Hold button.
2. The oldest holding call is connected.
3. Press the Hold button again to place this call on hold.
4. Press Hold again to answer the next oldest holding call.
5. Repeat as required for any calls on hold at your extension.

Conditions

a) Holding Call Answer will also operate for intercom calls placed on hold.
b) If the person on Hold hangs up, the system will automatically release the held CO line.

Hot Key Enable / Disable

FEATURE # 6 MNO

Hot Key is the automatic operation of dial pad keys while the telephone is idle. That is, if, while the extension is idle, you press a dial pad key (1 2 ABC 3 DEF 4 GHI 5 JKL 6 MNO 7 PQRS 8 TUV 9 WXYZ 0 OPER # * TONE) that button operation is processed as the first command of others that will follow (like the remainder of and extension number). Certain applications may prefer this automatic operation be eliminated. Therefore "Hot" Key (Dial Pad) can be disabled.

Related Features

Intercom calling

All “dial-access” features

Operation – Disable

While the telephone is idle, press FEATURE # 6 MNO. The display will momentarily show the feature status invoked:

```
HOT KEY DISABLED
```

Operation – Enable

While the telephone is idle, press FEATURE # 6 MNO. The display will momentarily show the feature status invoked:

```
HOT KEY ENABLED
```

Default Setting

Hot Key is enabled.

Hotel Mode – Alarm Clock Extension

FEATURE 9 WXYZ 2 ABC

– Room Status

FEATURE 7 PQRS #

Hotel Mode can be enabled in the system programming. This feature allows the system attendant to administer certain system extension features to emulate hotel operations.

The system attendant can:

Set extension wakeup calls via the Alarm Clock-Extension feature.

Set extension status to Checked IN, Checked OUT and Clean such that the associated LED of DSS/BLF buttons for the extension indicate the current status. In “Checked Out” and “Clean” modes, dialing at the extension is restricted to intercom calls only.

Related Features

Extension Password – Attendant

Alarm Clock - Extension

Related Programming

System Resource – Attendant
Call Handling – Hotel Enable

Operation – Wake Up Calls (via Alarm Clock Extension)

1. While the Attendant extension is idle, press FEATURE 9 WXYZ 2 ABC. The display shows:

```
EXTENSION   :
 bksp show chg
```

2. Input the extension for which the Wakeup call is to be set. Then press [**show**].

```
ALARM TIME:NULL
           chg
```

3. Press [**chg**].

4. Input the wakeup time in 24 hour format (e.g., 7AM is 0700.)

```
ALARM TIME:07:00
 one       always
```

5. Chose if this alarm time should be set as a one time occurrence or repeated everyday by pressing the associated LCD Interactive button [one] or [always]. You hear the confirmation tone and the display prompts for the next extension to program.

```
EXTENSION  :
 bksp show chg
```

6. Input the next extension for which a Wakeup call is to be set. Then press [**show**].

Or…

7. Exit Extension Alarm Clock mode (lift/replace handset or press the On/Off button twice.

Operation – Room Status

1. While the Attendant extension is idle, press FEATURE 7PQRS #. The display shows:

```
PSWD   :
 bksp show chg
```

2. Input the Attendant extension password. Then press [show]. The display shows:

```
EXTENSION  :
 bksp show chg
```

3. Input the extension for which the Room Status is to be set. Then press [**show**].

```
EXTENSION  :XXX
 in  out clean
```

4. Press the button corresponding to the status in which this extension is to be placed. You hear the confirmation tone and the extension status is updated. The display prompts for the next extension status for which Room Status changes are required.

```
EXTENSION  :
 bksp show chg
```

5. Input the next extension to be set. Then press [**show**].

Or…

6. Exit Extension Room Status mode (lift/replace handset or press the On/Off button twice).

Conditions

a) If a Release Key is programmed this key can be used to clear any active condition (Extension Alarm Clock mode, etc. with one touch.)

b) Hotel Enable must be set to “Y” (yes) for these features to operate.

Default Settings

Call Handling – Hotel Enable is set to “N” (no). (Range is Y/N.)

Programming Abstract

To allow the Tenant Attendant to set Room Status and Alarm Clock – Extension features at other system extensions set the Hotel Enable to “Y.”

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 03-20, then press [save]. This advances to the Hotel Enable programming screen.
- Press [chg]. Each time that change is pressed, the value of this database item is updated.
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Call Handling." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 3." Then press Enter.
- Use ↓ ↑ → ← to highlight the database item "Hotel Enable."
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Hotline

FEATURE 9 WXYZ * TONE

Hotline allows an extension to access an Extension or Speed Dial Directory number simply by lifting the handset. This feature is especially useful for elevator phones and applications that dictate a specific destination for extension(s) of the system.

Related Features

Speed Dial

Intercom Calling – Non Blocking

Related Programming

Extension – CO Line Assignment
Extension – Day/Eve Class Of Service

Operation – Setup

1. While the extension is idle, press FEATURE 9 * .

```
HOTLINE TO :NULL
           chg
```

2. Press [chg].

```
HOTLINE TO :_
 bksp save chg
```

3. Input the speed dial directory number or extension number where this extension is to be connected when taken off hook. Then press [save].

```
HOTLINE TO :xxx
immediate  delay
```

4. Select if this destination is to be immediate or delayed.

   If [immediate] is selected confirmation tone and the function is invoked.

   If [delay] is selected:

```
DELAY TIME    :1
           chg
```

   Press [chg] until the appropriate delay time (in seconds) displays.

Analog Ports (Single Line Telephones)

4. Dial # 9 * .
5. Dial the extension number or speed bin number.
6. Dial 0~9 (0~9 second delay).
7. Dial # * 9 * to cancel.

Operation – Invoke Hotline

1. While the extension is idle, lift the handset. The call is placed to the selected destination either immediately or after the delay time as selected.
2. Hang up to complete the call.

Conditions

a) If delay mode is selected other calls can be placed during the delay period.

b) The Hotline feature code (FEATURE 9 *) can be stored on an available Flexible Feature Button.

Default Setting

Hotline is disabled.

Hour Mode Selection (12/24)

Standard 12-hour time or 24-hour time mode can be selected for common display at all Digital Speakerphones.

Related Features

Attendant Administration
System Time/Date
SMDR
Alarm Clock - Extension
Alarm Clock System
CO Line Ringing Modes

Related Programming

System Application – Hour Mode
System Application – System Time

Conditions

a) When programming time related features, 24-hour format is used for input.
b) SMDR output is in 24-hour format regardless of the settings of Hour Mode.
c) The correct system time is entered in database programming along with the Hour Mode Selection, from any Digital Speakerphone extension using the database-programming password.
d) The "AM" and "PM" indications are not displayed.

Default Settings

System Application – Hour Mode is set at "12" seconds. (Range is: 12/24.)
System Application – System Time

Programming Abstract

- Program the appropriate Hour Mode.
- Reference System Time and Date for setting system time.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 08-03, then press [save]. This advances to Hour Mode programming.
- Press [chg] until the appropriate hour format displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Application." Then press Enter.

- Use ↓↑→← to highlight “Category 1.” Then press Enter.
- Use ↓↑→← to highlight the database item “Hour Mode.”
- Press Enter until the appropriate hour format displays.
- Continue making other programming changes as required.
- When you have completed all changes, press the Esc (escape) key to exit this database-programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Intercom Calling - Non Blocking

- Intercom Button

FEATURE 6 MNO 5 JKL

You can place an intercom call by dialing the intercom number associated to the extension you wish to call. If a Direct Station Selection/Busy Lamp Field (DSS/BLF) button is programmed, it can be used to place an ICM call. Intercom calls can be placed hands-free without lifting the handset. (Consideration must be taken for noisy environments that may be unsuitable for hands-free connections.)

You can determine how each extension receives intercom calls: Voice Announce Hands-free mode, Voice Announce Privacy mode, or Tone Ringing mode. (See Intercom Mode Selection.)

Related Features

Intercom Mode Selection
Auto Line Select
Forced Intercom Tone Ring
Forced Intercom Call Forward
Auxiliary Lamp
Flexible Button Programming
Intercom - Non Blocking
Flexible Feature Button Programming

Operation

1. If Hot Key is disabled, you must first press the Intercom Button, the On/Off button, or lift the handset to get intercom dial tone.
2. Dial the extension number (101 to 156).
   Or…
   Press the DSS button for the extension that you wish to call.

   VOICE EXT XXX
   msg
3. Hang-up to end the call.

Conditions

a) Some applications may require a button to indicate use of the intercom feature at extensions. To meet this requirement, the feature code FEATURE 6 MNO 5 JKL can be programmed on an available Flexible Feature Button for use.

b) Intercom calls to telephones in Voice Announce – Hands-free or Voice Announce - Private are “logically” answered by the system at the called extension. Therefore these calls cannot be picked up by other extensions using Group Call Pickup.

c) Auto Line Selection is set to “ICM” (Intercom) at default. So, intercom dial tone is heard automatically upon lifting the handset or when pressing the On/Off button.

d) When you call an extension that is in Voice Announce mode you can change the mode to Tone Ringing by * TONE after the extension number (Forced Tone Ringing).

e) If a called extension does not answer you can invoke a callback to that extension by first using Forced Tone Ring.

Intercom Mode Selection

FEATURE 9 WXYZ 8 TUV

A Digital speakerphone has the benefit of receiving intercom calls in three ways:

- Voice Announce Hands-free reply mode
- Voice Announce Privacy mode
- Tone Ringing mode

The Intercom Mode is set individually at each digital speakerphone for greater flexibility of operation.

Related Features

Call Forward
Flexible Feature Button Programming
Forced Intercom Tone Ring
Voice Announce – Hands-free Reply
Off Hook Voice Announce w/Hands-free Answerback

Operation – Setup

1. While the extension is idle, press FEATURE 9 WXYZ 8 TUV. You hear the confirmation tone and the display indicates the new mode set:

   VA-PRIVACY MODE

   VA-HF MODE

   TONE RING MODE

2. Press FEATURE 9 WXYZ 8 TUV again to advance through each of the available modes.

Operation – Receiving a Call in VA-HF Mode

When your extension is idle, an intercom call to your extension will alert you of the call with one tone burst. The voice connection is then immediately established and you may respond to the calling extension without lifting the handset.

Operation – Receiving a Call in VA-Privacy Mode

1. When your extension is idle, an intercom call to your extension will alert you of the call with one tone burst. The voice connection is then immediately established; however, the Mute function is automatically activated at your extension. The calling extension voice announcement is heard over the speaker but the microphone in your telephone is disabled.

2. You can:
   a. Lift the handset to speak confidentially with the calling extension.
   b. Press the Mute button to deactivate the Mute feature and speak with the calling extension hands-free. (Using speakerphone mode.)

Operation – Receiving a Call in Tone Mode

1. When your extension is idle, an intercom call to your extension will alert you of the call with a double-burst tone which is repeated until you respond or until the call follows a Call Forward route.
2. You can:
   a. Lift the handset to speak confidentially with the calling extension.
   b. Press the On/Off button to activate the speakerphone and speak with the calling extension hands-free.

Conditions

a) Intercom calls to Digital Speakerphones selected for Voice Announce - Hands-free or Voice Announce - Private are “logically” answered by the system at the called extension.

b) During Tone Ring, the red LED associated with the On/Off button will flash.

c) If a Flexible Feature Button has been programmed with the Intercom Mode Selection Code (FEATURE 9 WXYZ 8 TUV) the LED associated to that button will indicate the current mode selection as follows:
   - Voice Announce – Hands-free, LED will light steady green.
   - Voice Announce – Privacy, LED will light steady red.
   - Tone Ringing Mode, LED will not light

Default Setting

All digital speakerphones are set to Voice Announce – Hands-free Reply mode.

Intrusion - Extension/CO Line

Intrusion allows the initiator to enter into an existing conversation when the initiator has been given the privilege to do so via Extension programming (“Intrusion Active” = Y). This feature can be very effective for service observing and any time that forcedly entering into a conversation on a CO Line or at another extension may be required.

Intrusion can be invoked both on a busy CO Line and to a busy extension.

Related Features

Monitor - Extension Via Monitor COS

Related Programming

Extension - Intrusion Active, Intrusion Accept, Intrusion Tone

Operation

1. Press the busy CO Line button or dial a busy extension number.

   Call to a busy extension, the display will show:

   ```
   EXT XXX     BUSY
   cbck msg  next
   ```

   Press [next].

   ```
   camp voic intru
   ```

   Access a busy CO Line, the display will show:

   ```
   CO LN BUSY  XXX
   cbck       intru
   ```

2. Press [intru]. You are joined into the existing conversation.

3. Hang up to end the connection.

Analog Ports (Single Line Telephones)

To intrude on a busy extension, dial 8TUV.

Conditions

a) Your extension must have Intrusion Active set to "Y" (yes) for this feature to operate.
b) An Intrusion Tone will be presented to all parties when Intrusion is invoked (extensions and CO Lines).
c) Intrusion Tone may be deactivated.

LEGAL NOTICE:

This feature may violate privacy laws if used in a manner that is inconsistent with requirements of these laws. Manufacturer assumes no responsibility with regard to the use of this feature. It is provided for the virtue of ethical use only. YOU are responsible for using this feature appropriately considering all applicable laws.

d) The busy extension must have Intrusion Accept set to "Y" (yes) for this feature to operate.

Default Settings

Extension – Intrusion Active is set to "N." (Range is Y/N.)
Extension – Intrusion Accept is set to "Y." (Range is Y/N.)
Extension – Intrusion Tone is set to "Y." (Range is Y/N.)

Programming Abstract

- Program the feature Intrusion Active to YES for those extensions that should have the ability to intrude on calls at other extensions.
- Program the feature Intrusion Accept to NO for those extensions that should never be intruded.
- Program the feature Intrusion Tone to NO if the Intrusion tone should not be heard at the intruded extension when another extension has intrusion-joined the conversation in progress.

LEGAL NOTICE:

This feature may violate privacy laws if used in a manner that is inconsistent with requirements of these laws. Manufacturer assumes no responsibility with regard to the use of this feature. It is provided for the virtue of ethical use only. YOU are responsible for using this feature appropriately considering all applicable laws.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 01-101~156-11 to program Intrusion Active (where "101~156" = the extension number to program).
- Press [save]. This advances to the Extension – xxx – Intrusion Active database item.
- Press [chg] until the appropriate setting displays.
- Press the [next] to select the next data item to be changed. (Intrusion Accept, Intrusion Tone).
- Press [chg] until the appropriate setting displays.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu.
- Use ↓↑→← to highlight "Extension" and then press Enter.
- Use ↓↑→← to highlight "Intrusion Active" for the Extension to be changed.
  - Press Enter until the appropriate value displays.
- Use ↓↑→← to highlight "Intrusion Accept" for the Extension to be changed.
  - Press Enter. Each time that enter is pressed the value of this database item is updated.
- Use ↓↑→← to "Intrusion Tone" for the Extension to be changed.
  - Press Enter until the appropriate value displays.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Last Number Redial

FEATURE 8 TUV

The Last Number Redial (LNR) feature automatically dials the last number dialed from your telephone. The LNR retains sixteen (16) digits for each extension.

Related Features

Automatic Redial

Memo Pad

Related Programming

Call Handling - Dial Wait Time, Dial Delay Time, Dial Tone Detect

Operation

You may either choose a specific CO line for use with LNR by first pressing that CO line button or you may allow the line to be selected automatically by the LNR feature.

1. Allow the system to select a CO Line and automatically dial:

   Press FEATURE 8 TUV. The previously dialed number is dialed on the CO Line selected by the system.

2. Hang up to end the call.

Or...

1. Choose a CO Line first:

   Press the appropriate CO Line button.

   Press FEATURE 8 TUV. The previously dialed number is dialed on the CO line selected.

2. Hang up to end the call.

Analog Ports (Single Line Telephones)

Dial # 8 TUV.

Conditions

a) Last Number Redial cannot be applied to intercom calls.
b) When you activate LNR the system will first select the previously used CO line to dial. If that CO line is busy, any idle CO line in the same CO line group will be selected. If all CO lines are busy you will hear busy tone and an Digital Speakerphone will display "ALL CO LINES BUSY."
c) The database programming data fields Dial Wait Time and Dial Tone Detection directly affect the performance of LNR. When these features are enabled, the telephone will either wait until dial tone is detected on a CO line, or wait for a preprogrammed period of time before digits are dialed from the LNR memory on the CO line.
d) To LNR immediately depends on whether tone detection is allowed or pause timers apply. If tone detection is allowed, the system will Redial the last number after CO dial tone is detected. Otherwise, the system will Redial the last number only after the pause time for tone detection is exceeded.
e) The LNR feature code may be programmed on a programmable feature button.
f) LNR will repeat a hook-flash in the same sequence as it was first dialed. If a speed dial number was first dialed.
g) LNR will dial the speed dial number and any subsequent manually dialed digits.
h) In the event that all CO lines are busy you will hear busy tone and your telephone will display:

   ALL CO LNS BUSY

   If the Last Number Redial memory is empty you will hear error tone and the telephone will display:

   LNR EMPTY

LCD & Interactive Buttons

The DX-80 Digital Speakerphone is equipped with a 2-row, 16-column Liquid Crystal Display to enhance features operation. The display indicates feature operation status and provides for input based on feature use. The display also facilitates the standard Caller ID feature – allowing all digital speakerphones to receive caller ID information as it is received from the servicing telephone company. (Caller ID requires a subscription from the servicing telephone company.)

The DX-80 Digital Speakerphone incorporates three screen-prompt, interactive buttons that simplify feature operation. The bottom row of the display is used to convey options during normal call processing that allow the user to select from the various choices.

These three, LCD Interactive buttons take on many different functions, facilitating everything from leaving a callback request to programming the system database.

Related Features

Most features

Loud Bell / External Page / Music Source – Control

There is often a requirement to control ancillary devices via the telephone system. The DX-80 system provides one dry contact closure (standard) for interface of the various devices. It is important to adhere to the electrical requirements of this contact. The contact closure is rated at 24vdc, 1Amp.

The Contact Closure can be assigned to operate in three different ways:

Loud Bell Control: If the system is installed in high noise environments, there is often a requirement to equip a loud (high-gain) ringing device. Using the contact in this way provides for control of an optional, ancillary loud ringing device. The device is connected to the contact as a trigger. When ringing occurs on CO Lines in CO Line Groups designated as Loud Bell CO Line Groups, the contact closure operates and controls the connected device.

External Page Control: The contact may also be programmed to control External Paging apparatus. When programmed in this manner, the contact closure operates whenever the External Paging Port is activated.

Music Source Control: The contact may also be programmed to control Message On Hold devices. In this mode of operation the contact closes (make) whenever CO lines are placed on Hold. This function can reduce wear on electromechanical devices that provide the message on hold function.

Related Features

CO Line Ringing Modes
External Paging
Music On Hold

Related Programming

System Resource - Loud Bell
CO Line - CO Line Type, CO Line Group

Default Settings

System Resource – Loud Bell = “L.B.” (Loud Bell). (Range is: L.B., MS1, MS2, EP.)
System Resource – Loud Bell – CO Line Group – 1~8 = “N.” (Range is Y/N.)

Programming Abstract

- Program the Loud Bell contacts for the device type control.
- If using the contact for control of a Loud Bell device, program what CO Line Groups will activate the bell.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **04-13-1**, then press [save]. This advances to the Loud Bell – Application programming screen.
- Press [chg] until the appropriate application displays (L.B., MS1, MS2, EP).
- If the contact is to be used as LBC, press [next] to the CO Line Group(s) that will cause the contact to operate.
- Press [chg] to activate/deactivate the LBC for each CO Line Group.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "System Resource" and then press Enter.
- Use ↓↑→← to highlight "Loud Bell." and then press Enter.
- Use ↓↑→← to highlight the database item "Application" if this is to be changed.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Use ↓↑→← to highlight the database item "CO Group 1~8" to associate the control contact to the selected CO Group. (Loud Bell application only.)
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"

  Press "**N**" to abort changes and leave all data unchanged.

  Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"

  Press "**N**" to abort changes and leave all data unchanged.

  Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Meet Me Page

FEATURE 5 JKL 9 WXYZ , #

When trying to locate someone via paging (the called person is away from the desk or has no specific office location), Meet Me Page is a great way to easily establish a private connection.

Any page announcement (internal or external) may be answered by the "Meet Me" code. Upon hearing a page announcement, you can dial the Meet Me Page code from any telephone and be connected to the person paging. During a Meet Me Page the internal and external paging zones are released for new (other) page announcements.

The Digital Speakerphone operation enhances this high-use feature by providing a one-button access to the operation. Any DX-80 digital extension may dial the single digit # to answer a page announcement.

Related Features

Flexible Feature Button Programming	External Paging
Paging	Page Allow/Deny

Operation

1. While a page is in progress, the telephone displays:

   STA xx PAGE

2. Press # or FEATURE 5 JKL 9 WXYZ. The display shows:

   EXT XXX TALK

Analog Ports (Single Line Telephones)

While a page is in progress, dial # or # 5 JKL 9 WXYZ.

Conditions

a) A page may be answered at any telephone using the Meet Me Page code, even if the page announcement is not heard over the telephone speaker.
b) The page may be any zone page or all page.
c) The Meet Me Page code may be programmed on any available flexible button.

Memo Pad

FEATURE 5 JKL * TONE

Memo Pad is a quick access notebook for jotting down a telephone number. For instance, if while speaking to someone on the telephone they convey to you a telephone number that you wish to take down, the Memo Pad feature allows you to do this quickly without finding a piece of paper and pencil.

Related Features

Flexible Feature Button Programming	Automatic Redial
Last Number Redial	Saved Number Redial

Operation – Taking a Memo

1. While connected to a CO Line in a conversation (either answered an incoming call or placed an outgoing call), press FEATURE 5 JKL * TONE.

   ¯bksp save chg

2. Using the dial-pad, input the number to be stored, then press [save].
3. Confirmation tone is heard and the display returns to the CO Line connected status.

Operation – Dialing the Number Stored in Your Memo Pad

1. While the telephone is idle press FEATURE 5 JKL * TONE.

   Or press the CO Line you want to place this call and then press FEATURE 5 JKL * TONE.

   ¯bksp save chg

2. The call is placed.
3. Hang up to end the call.

Conditions

a) The feature code FEATURE 5 JKL * TONE can be programmed on an available Flexible Feature Button.
b) There is only one memory location for Memo Pad numbers.

Messaging – Call Me, Text or Voice

FEATURE 9 WXYZ 6 MNO

A busy or unattended Digital Speakerphone may be notified of a call attempt via one of the DX-80 system Messaging features. At a Digital Speakerphone, the display will show messages waiting and provide prompts to assist the user in responding to the messages.

A message may be sent and received in several forms:

- A Call Me message
- A customized text message
- A preprogrammed text message (six total available)
- A Voice Mail message

Related Features

Call Back
Auxiliary Lamp
LCD Interactive Buttons

Related Programming

System Resource - Preprogrammed Message, Outgoing Message, Premise Message

Operation – Sending a "Call Me" Message Waiting

1. Place a call to an extension, you get no answer or busy…

```
CALLING STA xxx
cbck msg

STA  xxx  BUSY
cbck msg next
```

2. Press [msg].

```
MESSAGE TYPE
call me  preprog
```

3. Press [call me]. Confirmation tone is heard and the message is left at the called extension. Your extension returns to idle after briefly displaying:

```
MSG TO EXT XXX
```

Analog Ports (Single Line Telephones)

1. When you have called an extension and want to leave a message, dial # 9 WXYZ 6 MNO.
2. To cancel, dial # * TONE 9 WXYZ 6 MNO and then the extension number of the extension where the message was left.

Operation – Sending a "Text" Message

1. Place a call to an extension, you get no answer or busy…

```
CALLING STA xxx
cbck msg

STA  xxx  BUSY
cbck msg next
```

2. Press [**msg**].

```
MESSAGE TYPE
call me  preprog
```

3. Press [**preprog**]. You are prompted to select the appropriate message:

```
EMPTY
 send next chg
```

4. Select the text message to send:

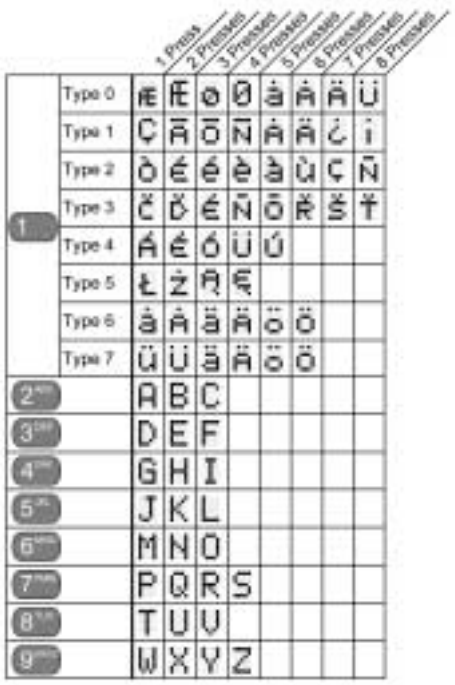
   To select from the preprogrammed list of text messages to send press [**next**] until the appropriate message displays.

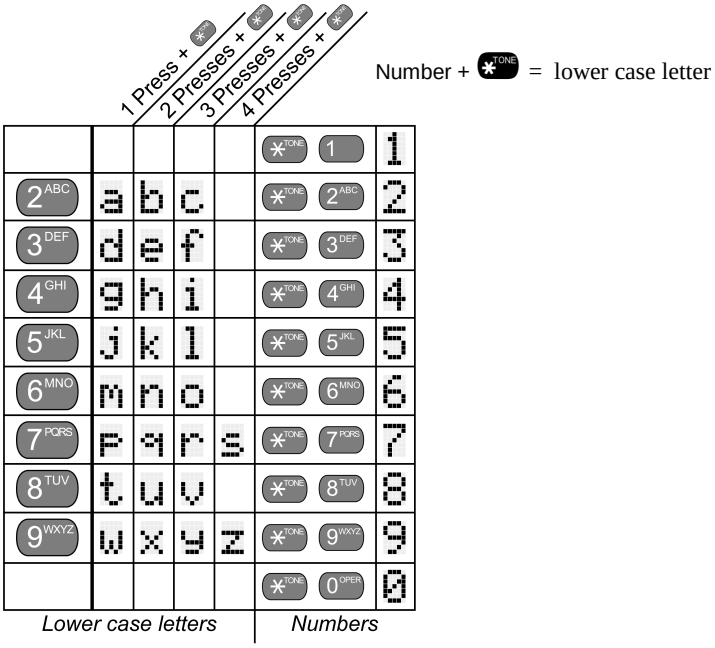
Or...

Press [**chg**] to input a custom message.

```
¯bksp save chg
```

Use the table and dial pad keys to input the message. Then press [**save**].





5. Press [**send**] to send the message to the called extension.

Operation – Sending a "Voice" Message (Voice Mail System Required)

1. Place a call to an extension, you get no answer or busy…

```
CALLING STA xxx
cbck msg

STA  xxx  BUSY
cbck msg next
```

2. Press [**msg**]. When the (optional) DX-80 Voice Mail system is equipped, the options in the display change to add this option.

```
MESSAGE TYPE
callme vmsg prep
```

3. Press [vmsg]. The connection is immediately diverted to the DX-80 Voice Mail system.

Operation – Answering a Message

1. Your telephone display indicates the Message Waiting:

```
MW FROM EXT XXX
more reply del
```

If a Text Message was sent:

```
MW FROM EXT XXX
 more show del
```

2. If [more] displays, it can be pressed to review other messages left at your extension.
3. Press [show] to display Text Messages.
4. Press [reply] to callback the extension who left a Call Me message.
5. Press [del] to delete the displayed message.

Operation – Canceling a Text Message or Call Me Message (that you sent)

1. Press FEATURE *TONE 9WXYZ 6MNO.

```
DEL MW_TO  :XXX
 bksp save chg
```

2. Input the extension number where the message was left. Then press [save].

```
DEL MW_TO    XXX
```

3. The message is deleted.
4. Press [msg].

```
MESSAGE TYPE
call me  preprog
```

Conditions

a) Dial Pad Key 1 is used to select special characters. Refer to the Letter Scheme feature
b) Dial *TONE before any dial pad key to insert the numeral on the dial pad key instead of a letter in this character position.
c) When *TONE is pressed after a letter has been selected for this character position, the selected letter is forced to lower case.
d) Use # to insert a space.
e) Use # to advance to the next character position.
f) Custom Text Messages can be 16 letters/symbols maximum.
g) When a custom message has been input, that message is retained for future use.
h) The system will allow a total of forty-eight (48) message wait indications in the system at any one time.
i) At Digital Speakerphones, the message waiting indication will not be removed until [reply] or [delete] is pressed.
j) When a message wait indication has been left at an extension, the Auxiliary Lamp at that extension will slow-flash green.
k) Each extension may receive more than one message waiting from various extensions.
l) Multiple messages are retrieved in the order that they were left.
m) Each extension can leave only one message waiting at any one extension.

Default Setting

System Resource – Preprogrammed Message – Outgoing Message 1 = “Call Operator”
System Resource – Preprogrammed Message – Outgoing Message 2 = “Call Home”
System Resource – Preprogrammed Message – Outgoing Message 3 = “Call School”
System Resource – Preprogrammed Message – Outgoing Message 4 = “Visitor Waiting”
System Resource – Preprogrammed Message – Outgoing Message 5 = “Urgent”
System Resource – Preprogrammed Message – Outgoing Message 6 = “Come See Me”

Programming Abstract

Change the content of the preprogrammed messages as necessary.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **04-07-01-01**, then press [save]. This advances to Preprogrammed Messages – Outgoing (Text) Message – 1.
- Press [next] (if necessary) to advance to the next preprogrammed message to change.
- Press [chg] to input a new message for the selected preprogrammed message.
- Use the chart and the dial pad keys to input the new message. When finished press [save].
- Continue programming messages as required.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight “System Application” and then press Enter.
- Use ↓ ↑ → ← to highlight “System Resource” and then press Enter.
- Use ↓ ↑ → ← to highlight “Preprogrammed Message” and then press Enter.
- Use ↓ ↑ → ← to highlight the message to be changed. Then press Enter.
- Input the message and then press Enter to temporarily store this data.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.

- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press [Esc] (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Messaging – Status Text

FEATURE 9 WXYZ 0 OPER

Each digital telephone may invoke an extension status display message to inform other users of the current status of the extension/user. There are six programmed messages that may be used and one user-customizable message. Whenever another digital speakerphone calls the extension with this Status message active, the message displays at the calling extension.

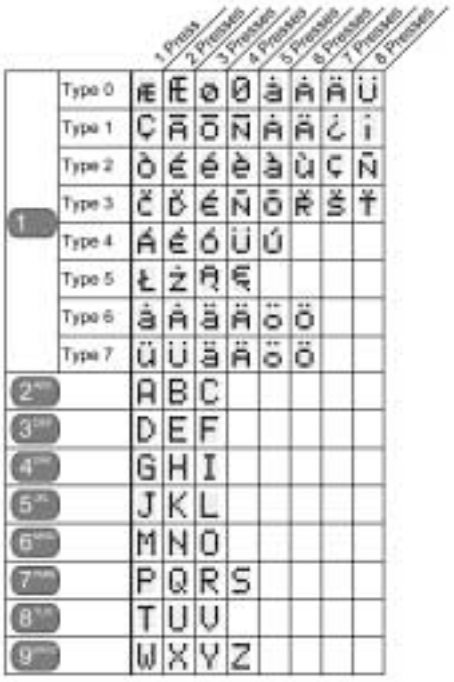
Operation – Setup

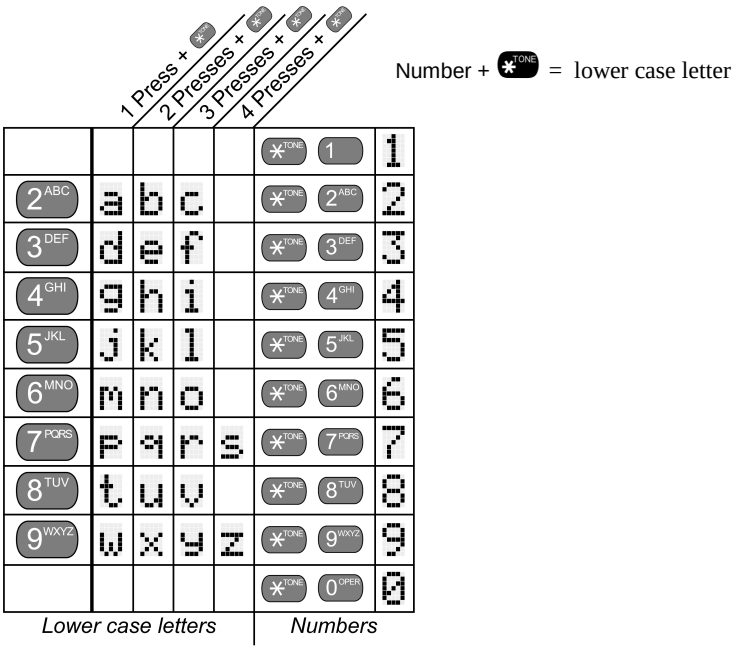
1. The extension must be idle.
2. Press FEATURE 9 WXYZ 0 OPER. The display shows the first message choice (customizable):

```
EMPTY
store next chg
```

3. To input a custom message:

   Press [**chg**], then use the alpha-numeric chart and dial-pad to write the message.





   Press [**save**].

   Otherwise, press [**next**] until the appropriate pre-programmed message to displayed.

4. To activate the message for status indication, press [**store**].

Operation – Deactivate

1. The extension must be idle.
2. Press FEATURE *TONE 9WXYZ 0OPER. The display shows:

   STATUS MSG DEL

3. The telephone returns to idle.

Conditions

a) Dial Pad Key 1 is used to select special characters. Refer to the Letter Scheme feature

b) Dial *TONE before any dial pad key to insert the numeral on the dial pad key instead of a letter in this character position.

c) When *TONE is pressed after a letter has been selected for this character position, the selected letter is forced to lower case.

d) Use # to insert a space.

e) Use # to advance to the next character position.

f) Messages can be 16 letters/symbols maximum.

g) The Message – Status feature code can be stored on an available Flexible Feature Button.

h) When the Message – Status feature code is stored on a Flexible Feature Button, that button is used to activate and deactivate the status message.

Default Settings

System Resource – Preprogrammed Message – Premises Message 1 = “Out to lunch”
System Resource – Preprogrammed Message – Premises Message 2 = “Will return soon”
System Resource – Preprogrammed Message – Premises Message 3 = “Gone for the day”
System Resource – Preprogrammed Message – Premises Message 4 = “In a meeting”
System Resource – Preprogrammed Message – Premises Message 5 = “Out of office”
System Resource – Preprogrammed Message – Premises Message 6 = “On vacation”

Programming Abstract

Change the content of preprogrammed messages as necessary.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # *TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **04-07-02-01**, then press [save]. This advances to Preprogrammed Messages – Premises (Status) Message – 1.
- Press [next] (if necessary) to advance to the next preprogrammed message to change.
- Press [chg] to input a new message for the selected preprogrammed message.
- Use the chart and the dial pad keys to input the new message. When finished press [save].
- Continue programming messages as required.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "System Application" and then press Enter.
- Use ↓↑→← to highlight "System Resource" and then press Enter.
- Use ↓↑→← to highlight "Preprogrammed Message" and then press Enter.
- Use ↓↑→← to highlight the message to be changed. Then press Enter.
- Input the message and then press Enter to temporarily store this data.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Modem (Optional MDM)

The DX-80 system can be equipped with an optional internal modem for DX-80 Remote PC-DBA Programming support. When equipped, the Modem Module provides a dedicated communications path between the system processor and PC-DBA. This communications path does not require use of analog port system resources.

Related Features

Database Administration via PC-DBA

Related Programming

System Resource - Modem and Serial Port

Conditions

Modem speeds are 1200 bps/ 2400 bps.

Default Settings

System Resource – Built-in Modem – DIR. No. (directory number) is set to "199."
System Resource – Built-in Modem – Baud Rate is set to "2400."

Programming Abstract

- Change the modem directory number to the appropriate number.
- Change the modem operating baud rate if the application requires this change.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **04-15**. Then press [save]. This advances to the Built-in Modem programming screen.
- Press [show]. This advances to the Built-in Modem – Directory Number programming screen.
- To change the modem directory number, press [chg].
  - Input the new directory number that is to be assigned to the modem resource. (The directory number must be from those designated for Extension Directory Numbers.)
  - Press [save].
- Press [next]. This advances to the Built-in Modem – Baud Rate programming screen.
- Press [chg] until the appropriate baud rate displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "System Resources" and then press Enter.
- Use ↓ ↑ → ← to highlight "Modem & Serial Port" and then press Enter.
- Use ↓ ↑ → ← to highlight the database item "Built-in Modem – DIR. No." if the number is to be changed.
- Press Enter.
- Input the new directory number and then press *enter* to temporarily store this data.
- Use ↓ ↑ → ← to highlight the database item "Built-in Modem – Baud Rate" to change the operating speed of the modem.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"

  Press "**N**" to abort changes and leave all data unchanged.

  Press "**Y**" to save changes.

- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"

  Press "**N**" to abort changes and leave all data unchanged.

  Press "**Y**" (yes) to continue with the save operation.

- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Monitor – Extension/CO Line

The DX-80 system allows users to monitor conversations at other extensions for the purposes of service observance. Monitoring of busy Extensions and CO Lines is possible only at extensions with a Monitor Class Of Service that has priority over the Monitor Class Of Service of the extension to be monitored.

Since this feature is very similar to Intrusion, it is possible to "shift" between these two features when Monitor has been invoked.

LEGAL NOTICE:

This feature may violate privacy laws if used in a manner that is inconsistent with requirements of these laws. Manufacturer assumes no responsibility with regard to the use of this feature. It is provided for the virtue of ethical use only. YOU are responsible for using this feature appropriately considering all applicable laws.)

Related Features

Intrusion

Related Programming

Extension – Monitor Class

Operation

1. Place a call to a busy extension or press a busy CO Line button.

   CO LN BUSY 742
   cbck monit

2. Press [monit]. The audio connection at the busy CO Line is connected to your extension. Also at this time, the Mute function at your telephone is automatically activated, making the monitor condition as un-intrusive as possible. The display indicates the internal extension that is being monitored.

   MONITOR EXT XXX
   intru

3. You may press [intru] or Mute to intrude on the conversation (your voice part of the call.)

Analog Ports (Single Line Telephones)

When you have called an extension that is busy, dial 1.

Conditions

a) The highest level of priority in Monitor Class is "0."
b) "9" is the least priority level.
c) Monitor will not be allowed if the called extension's Monitor COS matches the calling extension Monitor COS.

Default Settings

Extension – Monitor Class is set to "5" for all extensions.

Programming Abstract

Change the Monitor Class for all those extensions that should have the ability to monitor other extensions.

LEGAL NOTICE:

This feature may violate privacy laws if used in a manner that is inconsistent with requirements of these laws. Manufacturer assumes no responsibility with regard to the use of this feature. It is provided for the virtue of ethical use only. YOU are responsible for using this feature appropriately considering all applicable laws.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **01-101~156-07**, then press [save]. This advances to the Monitor Class programming screen for the extension selected.
  - Press [chg] until the appropriate Monitor Class for this extension displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Extension" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1" and then press Enter. The first (of 5) Extension – Category 1 screen displays.
- Use ↓ ↑ → ← and Page Up Page Down to highlight the database item "Monitor Class" for the Extension to be changed.
- Press Enter until the appropriate Monitor Class displays for the selected extension.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Music On Hold (Two Source)

CO lines that are placed on Hold are connected to one of two External Music Sources. The DX-80 system provides two sources of Music On Hold since the system may be installed in a location that serves two separate businesses and music on hold requirements.

Alternately a "Tone" can be provided on hold as well. If neither of the two music channels is connected to a music source, or if the music sources are not intended for the music on hold function, the Beep Tone can provide confirmation to callers on hold that their call is still holding. The Tone is a one-second tone repeated every 4 seconds.

Related Features

Background Music

Related Programming

CO Line - MOH Source
System Application - Numbering Plan - Music Source

Operation

Whenever a CO Line is placed on hold, the programmed music source is heard.

Conditions

The music channel(s) must be connected to some music source if background music or music on hold is necessary.

Default Settings

CO Line – MOH Source set to "MC1" (Music Channel 1) for all CO Lines.

Programming Abstract

Program the Music Channel (1 or 2) or Tone for each CO Line.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **02-740~755-06**, then press [save]. This advances to the MOH Source programming screen for the CO Line input (CO Line 1 = 740, CO Line 16 = 755).
    - Press [chg] until the appropriate MOH source displays (MC1, MC2, Tone).
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.

- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "CO Line" and then press Enter.
- Use ↓↑→← to highlight "Category 2" and then press Enter.
- Use ↓↑→← to highlight the database item "MOH Source" for the CO Line to be changed.
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Mute

MUTE

Mute is provided to allow for temporary canceling of transmission to the connected party. Whenever a private conversation is required inside the office, Mute can be invoked to prohibit the telephone-connected party from listening in. Press the Mute button during a conversation to cancel the microphone whenever necessary.

All Digital Speakerphones have a standard mute button.

Operation

1. While connected to any call, press the Mute button. The display momentarily shows:

   MUTE ACTIVE

2. Press the Mute button again to cancel. The display momentarily shows:

   MUTE INACTIVE

Conditions

When Mute is active, the red Auxiliary Lamp flashes slowly.

Night Service Mode / Activate

FEATURE 6 MNO 3 DEF

Business situations including after-hours operation require ringing patterns to be different than they may be during normal business operations. You can place the system into Evening Mode as one of the available Service Modes.

This mode of operation allows you to adjust CO line ringing, dialing characteristics and various other features for special handling during these times.

Any extension may manually switch the system service from day to night mode, or vice-versa using the Attendant Administration (if the password is known). Only the attendant extension can set the system mode of operation using the Evening Mode code or feature button programmed with the code for simple one-button operation.

Related Features

Automatic CO Line Ringing Mode
CO Line Ringing Modes
CO Line Assignment
CO Line Ring Assignment
Call Forward – CO Predefined
Class of Service – CO Line
Class of Service – Extension
Toll Restriction
Voice Mail - Digital Integration
Automated Attendant

Related Programming

CO Line - Day/Eve Class, Answering Position,
Call Handling - Auto Attendant
Restrictions - Toll Restriction
System Application - Time Switching
CO Line - Day/Eve Class, Answering Position
Call Handling - Auto Attendant
Restrictions - Toll Restriction
System Application - Time Switching

Operation – Setup Service Mode button for One-button Operation

At the attendant extension, program a button for the Service Mode feature code.

1. Press FEATURE # 3 DEF.
2. Press an available Flexible Feature Button.
3. Press [ftr].
4. Press FEATURE.
5. Press 6 MNO 3 DEF + 9 WXYZ 9 WXYZ 9 WXYZ 9 WXYZ (four nines are the default Attendant Password).
6. Press [save].

Operation – Change Service Mode

1. At the attendant extension:

   Press the button programmed with the Service Mode feature code.

   Or...

   Press FEATURE 6 MNO 3 DEF.

   PSWD :_

   Input the attendant extension password.
2. The Service Mode is advanced to the next mode.
3. Repeat until the appropriate mode of service displays.

Conditions

a) The Service modes are displayed as follows: “EVE” = evening, “ALT” = Alternate, “ “ = Day mode.
b) The Service Mode code can be programmed onto any extension feature button to indicate system status, but only the attendant or alternate attendant can change the service mode using this button.
c) Service Mode can be changed at any extension using Attendant Administration.

d) "Time" Mode adjusts the service mode automatically according to the programming of Time Switching. (See Automatic CO Line Ringing Mode.)

e) "ALT" mode is an integral part of Automated Attendant.

Default Setting

The system is in Day mode at default.

Off Hook Voice Announce with Hands-free Answerback

With Off-Hook Voice Announce (OHVA) you can receive a voice announcement from a DX-80 system extension while your telephone is busy. OHVA uses the speakerphone circuit to accommodate a second conversation path to your telephone.

To receive an OHVA call, you must be using the handset for the call in progress. (You can't be on speakerphone and receive an OHVA announcement.)

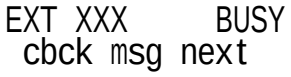
An OHVA call can easily be rejected if the call in progress should not be interrupted.

Related Features

LCD Interactive Buttons

Operation – Placing an OHVA to Another Extension

1. Call the busy extension.



2. Press [**next**]. The bottom row options change as follows:

3. Press [**voic**]. The OHVA call is established over the called extension speakerphone.

Analog Ports (Single Line Telephones)

1. When you call a busy extension, dial 0 OPER.
2. The OHVA call is established over the called extension speakerphone.

Operation – Receiving an OHVA Call

1. While on a call using the handset, you receive an OHVA call:

2. Respond to the OHVA caller using the telephone speakerphone or press [**reject**] to end the OHVA call.

3. Respond to the OHVA caller using the telephone speakerphone or press [**reject**] to end the OHVA call.

Conditions

a) When placing an OHVA call to an extension that is busy using the speakerphone, the display options will not include the [**voic**] option.

b) If you are on a line and have Mute activated, the line will remain muted until the Voice Over Busy is complete.

On Hook Dialing

Digital Speakerphone extensions may make outgoing calls without lifting the handset and monitor the dialing status through the built-in speaker. The button lamp is lit when monitoring a call.

The Digital Speakerphones provide full hands-free speakerphone operation in addition to On-Hook Dialing.

Related Features

Automatic Line Selection Hot Key

Operation

1. When Hot Key is enabled, dial any extension number while on-hook.

   Or...

   Press any CO Line button and dial while on-hook.

2. When Hot Key is disabled, press the On/Off button or press an idle CO Line button. Then dial while on-hook.

Page Allow / Deny

FEATURE # 9 WXYZ

You can block one-way pages (internal, group, and all page) over the Digital telephone speaker by dialing the Page Deny code. The Page Allow/Deny feature does not affect enabled Background Music.

Related Features

Paging

Related Programming

Extension - Paging Group

Operation – Setup

1. When the extension is idle, press FEATURE # 9 WXYZ.

   PAGING DENY

2. Press FEATURE # 9 WXYZ again to enable page announcements at your extension.

   PAGING ACCEPT

Conditions

a) The Page Allow/Deny feature code may be stored on a feature button.
b) You will still hear intercom calls and private voice announcements.

Default Settings

Extension – Paging group = “1” for all extensions. (Range is 1-8. See Extension Page Groups.)
Page Deny/Accept is set to Accept for all digital speakerphones.

Paging

You can perform several types of page announcements:

- Internal Paging - you can page a group or place a system-wide internal page.
- External Paging - you can access external ancillary paging equipment.

- All Call Paging - you can access all paging zones (internal and external).

Paging is one-way only. The Page Allow/Deny setting does not interfere with an extension's ability to make a page or to establish a "Meet Me" page.

Related Features

Do Not Disturb
Meet Me Page
External Paging
Flexible Feature Button Programming

Related Programming

Extension - Paging Group, Paging Allow
System Resource - External Pager
System Application - Ext Page Group, External Pager (see Flexible Numbering Plan).

Operation

1. To make a page announcement the page code must be known. At default the page access codes are as follows:
   - 400 = Tenant All Call
   - 401~408 = Page Groups (zones) 1~8
   - 777 = External Pager
2. Lift the handset (it is recommended that all page announcements be made using the handset to reduce potential audio feedback and oscillation {squeal}).
3. Dial the page group/zone directory number.
4. If the selected Page path is not being used, a short page alert tone is heard and the connection is made.

   PAGE TENANT X

   PAGE GROUP 401

   PAGE EXTERNAL
5. Make your page announcement and hang up to end the announcement.

Default Settings

Extension – Paging Group = 1 for all extensions. (Range is 1~8.)
Extension – Paging Allow = Y for all extensions. (Range is Y/N.)
System Resource – External Pager – Tenant Group = 1. (Range is 1~3.)
System Resource – External Pager – Paging Group 1 = Y. (Range is Y/N.)
System Application – Ext Page Group assigns codes 400~408.
System Application – Ext Pager assigns code 777.

Conditions

a) The display will show PAGE FAILURE if a page fails. This is due to that page group/zone being busy.
b) Any of the paging codes may be stored on a programmable feature button.
c) The External Pager port can be programmed to operate with any Page Group via System Resource – External Pager programming.

Programming Abstract

- Program extensions into paging groups (see Extension Paging Groups).
- Program extensions for the ability to initiate a page announcement.
- Program the External Pager to be associated with the appropriate Tenant Group.
- Program the External Pager to be associated with the Page Groups as required.
- Program directory number access codes (see Flexible Numbering Plan).

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program extensions into Paging Groups:

- Input **01-101~156-04**. Then press [save]. This advances you to the Paging Group programming screen for the extension selected.
- Press [chg] until the appropriate Paging Group number displays.
- Press the Volume button (up or down) to return to the DB Item Select screen.

Program External Pager to a Tenant Group and Paging Groups:

- Input **04-12-1-01**. Then press [save]. This advances to the External Pager – Tenant Group programming screen.
- Press [chg] until the appropriate Tenant Group displays. This is the tenant group to which the external pager will be associated.
- Press [next] until the Paging Group to be programmed displays.
- Press [chg] until the proper setting (Y/N) displays for each of the Paging Groups. This setting determines if the External Pager will be connected for page announcements whenever the selected Page Group is dialed.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program extensions into Paging Groups:

- Use ↓ ↑ → ← to highlight "Extension" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1" and then press Enter.
- Use ↓ ↑ → ← and Page Up Page Down to highlight "Paging Group" for the extension.
- Press Enter until the appropriate Paging Group displays for this extension.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.

- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program External Pager to a Tenant Group and Paging Groups:

- Use ↓ ↑ → ← to highlight "System Resource" and then press Enter.
- Use ↓ ↑ → ← to highlight "External Pager" and then press Enter.
- Use ↓ ↑ → ← to highlight the Tenant Group or Paging Group that you wish to program.
- Then press Enter until the appropriate value displays for these parameters.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Pause / Pause Insertion

FEATURE 7 PQRS 0 OPER

Pause Insertion is used to generate an intentional delay in dialing on outgoing CO line calls. A pause or a combination of pauses may be stored in the Speed Dial bins to allow timed access to special services, while allowing you to monitor the progress of the call.

A pause will appear as "P" on a Digital Speakerphone display.

The system also supports Automatic Pause Insertion. This function monitors digits dialed on "PBX" Type CO Lines for PBX Codes entered. When a PBX Code is recognized, the system automatically inserts a pause between that digit and the remaining digits for Last Number Redial system features.

Related Features

Automatic Busy Redial
Last Number Redial
Memo Pad
Saved Number Redial
Speed Dial - Extension, System
PBX Compatibility

Related Programming

CO Line - CO Line Type
Call Handling - Pause Time, PBX Auto Pause
System Resource - Speed Number Programming

Operation

When storing numbers in speed dial use the feature code FEATURE 7 PQRS 0 OPER to insert a pause.

Conditions

A pause occupies one digit position when stored in speed dial.

Default Settings

Call Handling – PBX Auto Pause is set to "1.0" seconds. (Range is 0.5 – 7.0)
Call Handling – Pause Time is set to "2.0" seconds. (Range is 0.5 – 7.0)

Programming Abstract

- Program the Pause Insertion Time to adequately apply a pause time based on the host PBX requirements for trunk calls. The time interval to be considered is from the time the trunk access code is dialed to the time that trunk dial tone is heard. When Last Number Redial is used (at a DX-80 extension) on a "PBX" Type CO Line circuit, an automatically inserted pause of this duration will be inserted between the PBX Code dialed and the remaining digits to be re-dialed.
- Program the Pause Time for the anticipated requirement of pause time for speed dial numbers.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Auto Pause Insertion Time (used with PBX Type CO Line ports).

- Input **03-15**, then press [save]. This advances to the PBX Auto Pause programming screen.
- Press [chg] until the appropriate PBX Auto Pause Time to displays.

Program Pause Time (used with speed dial).

- Input **03-04**, then press [save]. This advances to the Pause Time programming screen.
- Press [chg] until the appropriate Pause Time to displays.
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Call Handling" and then press Enter.

Program Auto Pause Insertion Time (used with PBX Type CO Line ports).

- Use ↓ ↑ → ← to highlight "Category 1" and then press Enter. The first (of 2) Call Handling – Category 1 screen displays.
- Use ↓ ↑ → ← to highlight **PBX Auto Pause** or **Pause Time**.
- Press Enter until the appropriate time displays.

- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

PBX Compatibility

The DX-80 system may be installed as a subordinate of a host PBX. In this connection arrangement users access PBX facilities via a DX-80 CO line button. To make a PBX call, (PBX extension numbers and trunks) the user accesses the PBX port via line button and dials the appropriate PBX code.

The DX-80 can be programmed to recognize the code used to access PBX trunks on PBX Type CO ports. This code identifies the type of call being placed so that call control can be administered. When the PBX code is recognized, the DX-80 system will invoke automatic conditioning of calling for redial features and administer Class Of Service characteristics as programmed for each user.

Related Features

Automatic Redial
Memo Pad
Saved Number Redial
Speed Dial - System, Extension
Flash

Related Programming

CO Line – CO Line Type (see CO Line Type Assignment).
CO Line – CO Group (see CO Line Groups).
Call Handling – CO Flash Time (see Flash – CO Line).
Call Handling – PBX Flash Time (see Flash – PBX Line).
Call Handling – Pause Time (see Pause Insertion).
Call Handling – PBX Auto Pause (see Pause Insertion)
CO Line Application - PBX Code, Search Order
System Resource - Speed Number Programming (see Speed Dial)

Conditions

a) When the PBX CODE is programmed, the DX-80 will apply extension toll restriction(s) when the code is dialed.
b) LNR and AR will recognize the code and automatically insert a pause following the code when used.
c) The PBX access code can be 1 to 4 digits.

Default Settings

CO Line Application – PBX Code = 9. (Range is any number up to four digits.)
CO Line Application – Search Order = SEQL. (Range is SEQF/SEQL/RAN.)

Programming Abstract

- Program the PBX Code required to access, PBX Trunk dial tone. (If different than "9.")
- Program the Search order of PBX circuits (for group access).

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program PBX Code for PBX Trunk access:

- Input **07-01-01~08**, then press [save]. This advances to the PBX Code programming screen for the CO Line Group selected (1~8).
- Press [chg].
- Input the PBX Code (e.g., 81) and then press [save].
- Press the Volume button to return to the DB Item Select screen.

Program Hunt Method (Search order) for the selected CO Line Group:

- Input **07-01-01~08-02**, then press [save]. This advances to the Hunting method programming screen for the CO Line Group selected (1~8).
- Press [chg] until the appropriate order displays (SEQL = Sequential Last, SEQF = Sequential First, RAN = Random access).
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program PBX Code for PBX Trunk access:

- Use ↓ ↑ → ← to highlight "CO Line Application" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1" Then press Enter.
- Use ↓ ↑ → ← to highlight the database item "PBX Code" for the CO Group to be changed. Then press Enter.
- Input the required code to access a PBX trunk on CO line circuit in this group.
- Press Enter to temporarily store this data.

Program Hunt Method (Search order) for the selected CO Line Group:

- Use the cursor positioning arrows to highlight “CO Line Application” and then press Enter.
- Use ↓ ↑ → ← to highlight “Category 1” Then press Enter.
- Use ↓ ↑ → ← to highlight “Search Order” for the CO Line Group to be changed.
- Press Enter until the appropriate search order displays.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Phantom Lines / Virtual Numbers

7PQRS 0OPER 0OPER ~ 7PQRS 2ABC 9WXYZ

Phantom Lines are software resources that act as placement mechanisms for call processing. CO Line and intercom calls can be routed to Phantom Line (or Virtual Number) where they can be accessed by any extension that has an appearance (button) for that Phantom Line. In the event that internal call routing requires a connection (CO Line or intercom) to be placed in a general access location, Phantom Lines can be the solution.

Phantom Lines do not audibly signal (ring), call indication at a Phantom Line is accomplished by fast flashing indication on the associated LED only. Calls that are connected to Phantom Lines are usually announced using the Page feature for proper pickup.

Related Features

Transfer
DSS/BLF
Flexible Feature Buttons

Related Programming

System Application – Numbering Plan – Virtual Numbers (see Flexible Numbering Plan).

Operation – Placing a Call Using Phantom Line

1. While idle, dial the Phantom Line number (lift the handset if you want a private conversation.)
2. The Phantom Line called will begin to fast flash at the extensions where this Phantom Line appears.

Operation – Transferring a Call to a Phantom Line

1. While connected (intercom or CO Line), press the Transfer button.
2. Dial the Phantom Line number.
3. Hang up to complete the transfer.
4. The Phantom Line called will begin to fast flash at the extensions where this Phantom Line appears.

Conditions

a) Phantom Lines must be programmed onto Flexible Feature Buttons to operate.

b) If no appearance of the Phantom Line exists in the system, the user attempting to call the Phantom Line or transfer a call to the Phantom Line will receive error tone and see the message OUT OF SERVICE in the display.

Default Settings

See Flexible Numbering Plan.

Phone Lock / Unlock

FEATURE 9WXYZ 7PQRS

Use this feature to prevent unauthorized CO Line calling from your extension. This feature code is also used to program your private four-digit extension password.

Related Features

Extension Password

Related Programming

Extension – User Password

Operation – Lock Your Phone

1. Press FEATURE 9WXYZ 7PQRS.

```
PSWD    :
 bksp show chg
```

2. Input the current password, then press [**show**].

```
LOCK PHONE
 pswd yes no
```

3. Press [**yes**].

```
PHONE LOCKED
```

4. No CO Line calls can be made at this extension.

Analog Ports (Single Line Telephones)

1. Dial # 9WXYZ 7PQRS.
2. Dial the extension password.
3. Dial #.

Operation – Unlock Your Phone

1. Press FEATURE 9WXYZ 7PQRS.

```
PSWD    :
 bksp show chg
```

2. Input the current password, then press [show].

```
LOCK PHONE
 pswd yes no
```

3. Press [no].

```
PHONE UNLOCKED
```

4. CO Line calls can now be made at this extension.

Analog Ports (Single Line Telephones)

1. Dial #, 9 WXYZ, 7 PQRS.
2. Dial the extension password.
3. Dial * TONE.

Conditions

a) When your extension is locked, you can only make intercom calls. You may still answer calls and retrieve calls on hold while your extension is locked.
b) If you accidentally forget your password, it may be retrieved via the system database administration.
c) The Attendant designated extension's Private Password is used to enter Attendant Administration.
d) If you try to make a CO line call from a locked telephone, you will hear error tone and the display will show "PHONE LOCKED."
e) The Phone Lock feature code may be programmed on a Flexible Feature Button.

Default Setting

All phones are unlocked at default.

Privacy

Factory default settings provide privacy for all intercom and CO line calls. These calls may not be monitored or interrupted by other extensions. If your programmed Class of Service allows you to have the Privacy Release and Voice Over Busy features, you may use those features to override the Privacy feature.

Related Features

Intercom Calling
CO Line Calling
Privacy Release
Intrusion
Monitor

Operation

Whenever Privacy is not "Released" conversations are private from interruption.

Conditions

a) Monitor can be used to listen-in on existing conversations.
b) Intrusion can be used to Barge-in on existing conversations.
c) If Privacy Release is set to "Y" for any CO Line, that CO Line conversation can be entered into by another extension.

Privacy Release

Privacy Release simplifies call processing by removing one of the safeguards. Privacy is typically required in most business applications, but in some environments, privacy encumbers the necessary operation. CO Line access

privileges can be “freely” accessible without regard to the conversation under way. To implement this operation, the Privacy feature can be programmed as “Released” on the CO Line(s) that are intended to function in this way This setting is often desirable when the system is installed in a home or home office.

The Privacy Release setting is applied on a CO Line basis. That is, one CO Line may be Privacy Released while another is still marked for Privacy thereby ensuring uninterrupted, private conversations on those CO Lines.

Related Features

Privacy

Related Programming

CO Line - Privacy Release

Operation

1. While a CO Line conversation is in-progress (and you know which CO Line to join), press that CO Line button.
2. If Privacy Release is set to “Y” (YES) for that CO Line, you are allowed to join in on the existing conversation.

Conditions

a) Three extensions maximum may join a CO line conversation in progress.
b) Privacy Release utilizes the system Conference Circuitry, therefore while up to three extensions can join a CO Line connection, the maximum Privacy Release, multi-party conversations is limited to 8 (eight). (Eight, four-party conferences.)

Default Settings

CO Line – Privacy Release is set to “**N**” (no) for all CO Lines. (Range is Y/N.)

Programming Abstract

Program the CO Lines for Privacy Release.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input 02-740~755-12, then press [save]. This advances to the Privacy Release programming for the CO Line selected.
- Press [chg] until the appropriate setting displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

- Use ↓↑→← to highlight “CO Line” and then press Enter.
- Use ↓↑→← to highlight “Category 2” and then press Enter.
- Use ↓↑→← to highlight “Privacy Release” for the CO Line to be changed.
- Press Enter until the appropriate setting displays.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “**SEND**” **function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.**

Private Line

The Private Line assignment provides a quick and secure method of programming one or more CO Lines for access by only one extension. If the associated Private CO Line appears (on a feature button) at other extensions, the button will light when busy but the line cannot be accessed from Hold, answered on incoming calls, or used for outgoing access. The Private Line is used exclusively by the extension that is assigned the “Private To” extension in Database Programming.

Related Features

CO Line Assignment
CO Line Ring Assignment
CO Line Receive Assignment

Related Programming

CO Line - Private To

Conditions

a) Incoming calls signaling on a private CO line will ring its associated extension regardless of whether the CO line ring assignment is allowed in programming. Private Line programming will override CO Line – Answer Position and CO Line Receive Assignments for that extension.
b) CO Lines designated as Private To, will follow call forward modes as set by the Private To extension.

Default Settings

CO Line – Private To is set to “NULL” (none) for all CO lines. (Range is Null/any extension number.)

Programming Abstract

Program the CO Lines required for private operation to the designated extension via the “Private To” setting.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **02-740~755-10**, then press [save]. This advances to the Private To programming for the CO Line selected.
- Press [chg].
- Input the extension number where this CO Line is to be assigned as private.
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "CO Line" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1" Then press Enter.
- Use the cursor arrows to highlight the database item "Private To" for the CO Line to be changed.
- Press Enter.
- Input the extension directory number of the extension that this CO Line is to be assigned as private.
- Press Enter to temporarily store this data.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Pulse to DTMF Conversion

When the system is connected to Dial Pulse (rotary) outgoing CO lines, you may manually force the system to output DTMF tones for access to special services over the same Dial Pulse CO line. The applications for this are limited but critical. For example, when you must dial in the Pulse mode because of equipment limitations in your area, it is often also desirable to switch to Touch Tone® mode (DTMF) when connected to automated services (like bank-by-phone, etc.)

Related Features

Speed Dial - Extension, System

CO Line Signaling

Related Programming

CO Line – Signaling

Operation

1. Access a CO Line (Signaling Type = Pulse) and dial any number.
2. After the pulse dialing has ended and the connection is made, press *TONE.
3. All digits dialed after this code will be sent in tone dialing format.

Analog Ports (Single Line Telephones)

1. After you make a Dial Pulse (rotary) call on a CO Line, dial *TONE.
2. Any digits dialed following *TONE will be sent in DTMF (Tone) mode.

Conditions

a) The dialing conversion can only be from pulse mode to tone (DTMF) mode, not from DTMF back to pulse mode.
b) The Pulse-to-Tone code can be programmed in any speed dial bin.
c) When making a call on a CO line with Pulse (Rotary) dialing, the digits following *TONE will be sent in DTMF tone mode.

Default Setting

All CO Lines are set to Tone Signaling mode.

Programming Abstract

Program CO Lines as required for Pulse dialing mode (see CO Line Signaling).

Recall

Recall is a means of assuring proper call handling. There are several types of recall that can be invoked in the DX-80 system. Recall affects Holding calls and Transferred calls. It is the intention of recall to assure that callers on hold or in transfer condition do not go unattended.

When a CO Line has been transferred to an extension it will recall the originating extension if the transfer destination extension does not answer the within the recall time period programmed. Similarly, calls placed on hold recall to the extension placing them on hold if the associated hold timer expires.

Related Features

Hold, Common (System) and Exclusive

Call Forward

Transfer, Idle and Busy

Related Programming

Call Handling - XFR_I Recall, XFR_B Recall

Operation

1. Operation of recall is associated to feature invoked (transfer, Hold, etc.)
2. While a CO line recalls the initiator, the initiator or any extension (with normal access of that CO Line) may answer the recall ringing line.

Conditions

a) Recalling CO Lines will follow Call Forward destination settings.
b) Recalls are not directed to the programmed Alternate Attendant extension.
c) When a holding or transferred call begins to recall, the outside party will hear transfer ring-back tone.
d) During recall, the CO line returns to System Hold allowing any extension with normal CO line receive privileges to retrieve the recalling line.

Default Settings

Call Handling – Hold Reminder (See Hold Reminder)
Call Handling – Ex_Hold Time (See Hold – Exclusive)
Call Handling – XFR_I Recall (See Transfer)
Call Handling – XFR_B Recall (See Transfer)
Call Handling – Hold Recall – SLT (See Hold – Common)
Call Handling – Hold Recall – DEKT (See Hold – Common)

Programming Abstract

See the programming instructions for the specific feature.

Recorded Announcement Device

Recorded Announcement Devices (RADs) are third-party ancillary analog message devices connected to specially programmed analog ports for the purpose of playing announcements while callers wait for their call to be answered. This call scenario is part of the UCD Group call distribution process.

A typical RAD message is, “Please continue to hold. Your call will be handled in the order in which it was received.” The significant advantage of these announcements is the software control of callers waiting in queue for a UCD Agent to become available. A caller can be played messages to assure them that they are still in queue and not forgotten while the system maintains the queue priority. See UCD Groups.

The DX-80 enhances this function significantly through the use of integrated RAD messages as part of the voice mail implementation. Whenever the optional DX-80 Hard Drive Voice Mail is installed into the DX-80 system platform, RAD announcement space is allocated for each of the UCD Group Overflow and Re-route Destinations. This significantly reduces the cost and complexity of applying this function to UCD operation.

Related Features

UCD Voice Announce Group
Voice Mail - Digital Integration

Related Programming

Extension – Port Type
Extension Application – Universal Call Distribution – Overflow
Extension Application – Universal Call Distribution – ReRoute
Extension Application – Universal Call Distribution – Attribute

Operation

No user specific operation is required. When UCD queued callers are routed to Recorded Announcement Devices/Integrated RAD the message is played at the programmed intervals.

Conditions

a) When analog RAD devices are used, multiple queued callers will stack in queue for message playback. When the analog port is available to handle another call the next call in RAD queue hears the recorded message. (This does not affect DX-80 Voice Integrated RAD.)

b) When multiple analog RAD devices are required to handle high call traffic, these RAD devices (with the same recording) can be placed into a UCD Group set for Attribute "V.A." When this is done, the Overflow Destinations and Reroute Destinations are programmed for that UCD Group number (not the individual analog port numbers connected to the RAD devices.

c) UCD queued callers who are routed to Overflow Destination – RAD devices remain in UCD queue. When a UCD Agent answers the queued – ringing call, the call is removed from UCD queue and connected to the UCD Agent.

d) If a UCD queued caller is listening to a RAD message when the Agent answers the UCD call, that call is diverted immediately to the UCD Agent and the RAD device port is released.

Default Settings

Extension – Port Type = EXT (standard extension)

Programming Abstract

When using ancillary (third party) RAD (Recorded Announcement) Devices connected to "VA" Type analog ports:

- Program the analog ports connected to the RAD Device(s) as Port Type "VA."
- Program the VA Type analog port directory (extension) number as the Overflow (1 and/or 2) for the UCD Group. (See UCD Group programming.)

When high traffic is expected for the UCD Group RAD destination:

- Program the VA Type analog port directory numbers in a specific "VA" UCD group.
- Program the selected VA UCD Group as Attribute "VA." (See UCD Group programming.)

When using the built-in DX-80 Voice system:

- Program each Overflow Destination for all necessary UCD Groups for directory number 433 (default for the DX-80 Voice UCD (VM) Group.) (See UCD Group programming.)
- Program each Reroute Destination for all necessary UCD Groups for directory number 433 (default for the DX-80 Voice UCD (VM) Group.) (See UCD Group programming.)
- See the *DX-80 Hard Drive Voice Mail Installation and Supervisor Guide* for details of this application programming requirements. (Program messages into the UCD Overflow mailboxes as required.)

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **01-101~156-21**, then press [save]. This advances to the Extension – Port Type programming screen for the extension selected.
- Press [chg] until the appropriate Port Type displays.
- Press the Hold button to go to the select another extension screen.
    - Input the extension number to change then press [show].
    - Press [next] until the Port Type screen displays.

- Press [chg] until the appropriate Port Type displays.

Or...

- Press the Volume button (up or down) to return to the DB Item Select screen and input **01-101~156-21** for the next extension to program.
- Repeat the above steps for all extensions to be programmed as Port Type "V.A."
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "Extension" and then press Enter.
- Use ↓↑→← to highlight "Category 2" and then press Enter.
- Use ↓↑→← and Page Up Page Down to highlight "Port Type" or the extension number to program.
- Press Enter until the appropriate Port Type displays.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Release Key

FEATURE 5 JKL 2 ABC

A digital speakerphone user may want a Release Key that will act to cancel or complete any current action. The Release Key function can speed call processing by allowing the user to eliminate the use of the hook-switch when call processing is encumbered by this operation.

The Release Key can be used to complete a call transfer (rather than going back on-hook). It can also be used to force the telephone into an idle mode regardless of the condition of the hook-switch.

Related Features

Flexible Feature Button Programming

Operation – Setup: Program the Feature Button for Release Key Operation

1. While the telephone is idle press FEATURE # 3 DEF.
2. Press the Flexible Feature Button that is to be used as the Release Key.
3. Press [chg].
4. Press [ftr].
5. Input the feature code prefaced with the FEATURE button FEATURE 5 JKL 2 ABC. Then press [save].
6. Exit the Flexible Feature Button programming mode.

Conditions

a) The Release Key must be programmed onto an available Feature Button to operate.
b) The Release Key operation will disconnect calls in progress.

Default Setting

No Release Key is programmed on the telephone Flexible Feature Buttons.

Reminder Tones

A specific interruption in intercom dial tone is provided to remind a user that a call processing affecting feature has been invoked. Whenever Do Not Disturb or Call Forward is enabled at your extension will hear this reminder tone when you access intercom dial tone. The distinction of Reminder Tone is a fast repeated interruption of intercom dial tone. This tone is frequently referred to as “stutter” dial tone.

When you lift the handset or press the On/Off button to active speakerphone or headset mode. Stutter dial tone indicates that Call Forward or Do Not Disturb is active.

Related Features

Do Not Disturb Call Forward

Operation

Intercom dial tone will be appended with “Stutter Dial Tone” whenever the extension is used to place intercom calls.

Conditions

Once you dial a digit the reminder tone is removed until the next time you access intercom.

Remote Programming via PC-DBA

Programming the DX-80 system database is possible in three ways. First it can be programmed by the telephone, second via PC-DBA on site, and third via PC-DBA remotely via modem. Refer to the feature description and operation for Database Administration – Via PC-DBA for instructions on how to establish a modem connection and then for programming system changes.

Emphasis must be placed on the F4-Send and F3-Receive functions.

The various setup parameters of the DX-80 system for use with a modem are described here. The DX-80 system remote access parameters “Built-in Modem” (DIR No. and Baud Rate) must be set to allow access to the DX-80. The parameters “PC-DBA Connection” (Auto Log Off and Log On Again) can be set to avoid unauthorized access to the DX-80 database.

Built-in Modem – Baud Rate is a data link speed setting requirement. This setting is defaulted at 2400 bps but can be changed to 1200 bps if necessary. The Directory Number setting is defaulted at extension 199. This also may be

changed if necessary. Regardless of the modem extension (directory number), this number is used to connect the external PC-DBA calling modem to the internal DX-80 modem.

Auto Log Off is set to determine how long a PC-DBA to DX-80 connection will stay connected before automatically being terminated.

Log On Again is set determine how long the DX-80 system will wait before accepting a valid password for PC-DBA programming whenever the wrong password has been entered three times. That is, if an attempt to access the DX-80 database via PC-DBA is unsuccessful because the entered password is incorrect, and this failure occurs three times… The system will reject any attempt for access even if the entered password is correct. The Log On Again time can be set to lengthen or shorten the time interval that determines when the system will begin to accept valid password connection attempts.

Related Features

Database Administration – Via PC-DBA

Related Programming

System Application – PC-DBA Connection – Auto Log Off
System Application – PC-DBA Connection –Log On Again
System Resource – Built-in Modem – DIR No.
System Resource – Built-in Modem – Baud Rate

Operation

Refer to Database Administration – Via PC-DBA, F9-Modem for operation instructions to connect to the DX-80 system remotely.

Conditions

a) Database Administration can be entered into by one programming facility simultaneously. Therefore if someone is programming the system via the Key Telephone and via on-site PC-DBA, remote access to Database Administration will not be possible.
b) If there is no automated attendant or Voice Processor equipped at the site to be remotely accessed, the modem connection must be manually administered on site. (The attendant/user must transfer the call to the modem directory number {199 at default}).

Default Settings

System Application – PC-DBA Connection – Auto Log Off = “20” minutes.
(Range is 10/20…60.)
System Application – PC-DBA Connection – Log On Again = 30 minutes.
(Range is 0/10…60.)
System Resource – Built-in Modem – DIR No. is set to “199.”
(Range is any extension number.)
System Resource – Built-in Modem – Baud Rate is set to “2400.” (Range is 1200/2400.)

Programming Abstract

- Set the Auto Log Off time to the length that a PC-DBA connection should be allowed to remain inactive before it is automatically disconnected.
- Set the Log On Again time to the appropriate time to secure the system from invasion attempts.
- Set the built-in modem directory number for the directory number.
- Set the built-in modem baud rate for the necessary operation rate.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)

- Press [**show**]. The DB Item Select screen displays.

To program Auto Log-Off and/or Log-On Again timers:

- Input 08-05, then press [**save**]. This advances to the Auto Log-Off programming screen.
- Press [**chg**] to change the Auto Log-Off timer until the appropriate time displays.
- Press [**next**] to advance to the Log-0n Again screen.
- Press [**chg**] to change the Log-On Again timer until the appropriate time displays.

To program settings for the built-in modem:

- Input 04-15, then press [**save**]. This advances to the Built-in Modem programming screen.
- Press [**show**]. This advances to the Directory Number screen.
  - To change to the built-in modem directory number, press [**chg**].
  - Input the appropriate directory number (must be a valid extension directory number as allocated in System Application – Numbering Plan – Extension Directory Numbers).
  - Press Enter to temporarily store this data.

Or...

  - Press [**next**] to advance to the modem Baud Rate screen.
  - Press [**chg**] until the appropriate baud rate displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

To program Auto Log-Off and/or Log-On Again:

- Use ↓ ↑ → ← to highlight “System Application” and then press Enter.
- Use ↓ ↑ → ← to highlight “Category 1” and then press Enter.
- Use ↓ ↑ → ← to highlight the database item “PC-DBA Connection – Auto Log-Off/Log On Again” as required.
- Press Enter until the appropriate value displays.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: “Exit This Feature”; press “**Y**” for yes.
- You will then be prompted to “Save Current Setting?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.

- If you press "**Y**" (yes), you will then be prompted "File Exists, Override?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Use ↓↑→← to highlight "System Resource" and then press Enter.

To program the built-in Modem Directory Number and/or Modem Baud Rate:

- Use ↓↑→← to highlight "System Resource" and then press Enter.
- Use ↓↑→← to highlight "Modem & Serial Port" and then press Enter.
- Use ↓↑→← to highlight the database item "Built-In Modem – Directory Number."
- Press Enter.
- Input the appropriate directory number (as allocated in System Application – Numbering Plan – Extension Directory Numbers).
- Press Enter.

Or...

- Use ↓↑→← to highlight Built-in Modem – Baud Rate.
- Press Enter until the appropriate value displays.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "File Exists, Override?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Ringing Level / Muted Ringing

Ringing Level - Ringing volume can be adjusted at each digital speakerphone. There are four levels of ringing available. Ringing Tone can be adjusted per the user's required setting using the Distinctive Ringing – Extension feature.

Muted Ringing - When an extension is busy on a call – incoming intercom and CO line calls will automatically ring at the lowest ring volume setting regardless of the level set by the extension. When the extension is idle, incoming calls ring at the loudness level set by the user.

Operation

While the extension is idle, press the Volume button (up or down) to set the ringing level.

Conditions

a) Ringing levels can be adjusted from the lowest level (0) to the highest level (3).
b) Distinctive Ringing – CO Line settings, overrides Extension settings.
c) The highest setting and lowest setting ringing levels are heard as an indication that this volume mode cannot be adjusted further.
d) As ringing levels are adjusted the current setting displays on the LCD.

Default Setting

Ringer volume is set at level 2.

Ringing Line Priority

Ringing Line Priority is a system-wide feature that automatically connects incoming calls based on a predetermined priority. The ringing extension is automatically connected to the priority ringing facility, upon lifting the handset or pressing the ringing button.
Ringing Line Priority can be overridden at the extension by first pressing a direct appearing line, CO Line Group, feature button or by dialing an intercom number on hook.

Ringing Line Priority is:

Callback – Extension	Highest
Callback – CO Line	
Recalling CO Line call	
Transferred CO Line call	
Incoming CO Line call	
Incoming ICM call	Lowest

Related Features

Same as the priority list above.

Saved Number Redial

FEATURE 5 JKL 1

Saved Number Redial is normally used whenever you want to retain a telephone number to be dialed later. The same feature code is used to save a number dialed (Save Dialed Number) and to dial the saved number (Saved Number Redial). Once stored, the saved number will be recalled when you dial the SNR code, regardless of what feature operations or numbers have been dialed at your telephone since you stored the number.

Related Features

Automatic Redial
Last Number Redial
Memo Pad
PBX Compatibility

Related Programming

Call Handling - Dial Wait Time, Dial Delay Time

Operation – Save Dialed Number

1. After a CO Line call has been placed and this number is to be stored, press FEATURE 5 JKL 1.
2. The dialed number is stored in the Saved Number memory.

Operation – Saved Number Redial

1. When the telephone is idle, press FEATURE 5 JKL 1.
2. The stored number is dialed.

Conditions

a) SDN can store up to a maximum of sixteen (16) digits.
b) When SNR is attempted and the SDN buffer is empty, the display will show “NO SAVED NUMBER.”
c) If all CO lines are busy when the redial is attempted the display will show” ALL CO LINES BUSY.”
d) The Save Dialed Number/Saved Number Redial feature code may be stored on any Flexible Feature Button for one-button storing and dialing operation.

Single Line Telephone – Flash

Single Line Telephones and similar analog devices connected to analog ports of the DX-80 system must use unsophisticated signaling to administer call-processing operations (like transfer and hold). This fundamental call control is handled in the form of specific hook-switch operations. These are known as Hook-switch Flash (or just Flash) commands.

Whenever a system feature is to be invoked at a single line telephone, the user must operate the hook-switch in a fashion that is distinguishable from an on-hook (hang up) request. This becomes essential for proper handling of calls considering the single line telephone user may operate the hook-switch quickly – desiring to hang up and place a new call. Yet this fast operation of the hook-switch might be interpreted as a Hook-switch Flash operation.

Considering these factors the DX-80 system provides for customization of the hook-switch command monitoring in system software. The database configuration may be adjusted to ignore hook-switch operations that are considered too short to be any valid request and to limit the time allotted

Related Features

None

Related Programming

Call Handling – SLT Hook Flash

Operation

1. While connected to a call (internal or external) operate the SLT/analog device hook-flash.
2. Dial the appropriate DX-80 system destination for this call. (Reference specific feature descriptions for correct operation of that feature.

Conditions

a) If the analog device/SLT does not have a Hook-Flash operation button, operation of the hook-switch must be fall within the time periods “Start” and “End” in order to be processed as a valid hook-flash operation.
b) Hook-switch operations that are shorter than the “Start” time are ignored.
c) Hook-switch operations that are longer than the “End” time are considered to be On-Hook (hang up) commands.

Default Settings

Call Handling – SLT Hook Flash – Start is set at “200” milliseconds. (Range is 60-1400)
Call Handling – SLT Hook Flash – End is set at “1000” milliseconds. (Range is 100-1500)

Programming Abstract

Set the acceptable flash range for the application.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)

- Press [**show**]. The DB Item Select screen displays.
- Input 03-14, then press [**save**]. This advances to the SLT Hook Flash programming screen.
- Press [**show**]. This advances to the **Start** screen.
- Press [**chg**] to change the Start range setting. (This timer indicates the minimum time that an analog/SLT must flash the hook-switch to be considered a valid flash-hook request. A hook-flash that is shorter than this timer is considered a mistake; no action is taken.)
- Press [**next**]. This advances to the **End** screen.
- Press [**chg**] to change the End range setting. (This timer indicates the Maximum time that an analog/SLT must flash the hook-switch to be considered a valid flash-hook request. A hook-flash that is longer than this timer is considered an On-Hook {hang up} request.)
- Continue making other programming changes or exit the programming mode.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "Call Handling" and then press Enter.
- Use ↓↑→← to highlight "Category 2" and then press Enter.
- Use ↓↑→← to highlight the database item "SLT Hook Flash – Start or End" as required.
- Press Enter until the appropriate value displays.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Single Line Telephone – CO Line Flash

Reference the feature: Flash – CO Line. When a Single Line Telephone must generate a Flash command to the connected CO Line (typically applicable to PBX circuits and Centrex® features of CO Lines) the SLT – CO Line Flash command must be used.

Related Features

Single Line Telephone – Flash

Flash – CO Line

Related Programming

Call Handling - CO Flash Time (Reference Flash – CO Line)

Operation – Sending a Flash to a Connected CO Line from an SLT

1. While connected on a CO Line and conversation, operate the single-line telephone hook-switch flash.
2. Dial the code #3DEF. The DX-80 sends the hook-switch flash command to the connected CO Line.
3. Dial whatever code is required to complete the hook-flash initiated PBX/Centrex® feature.

Conditions

The successful operation of the connected device features (PBX/Centrex®) is dependant upon proper operation of that product's features. Refer to the information provided with the connected equipment for more information.

Single Line Telephone / Analog Device Support

The DX-80 system basic configuration has four (4) standard analog extension ports available. As the system expands, additional APM4's (Analog Port Module-4 port) can be installed in place of Digital Port Module-8's (DPM8).

Analog extension ports are provided for connection of standard, two-wire, analog telephone equipment to the digital network of the DX-80. Common uses of the analog extension ports are facsimile machines, modems, wireless and wired single line analog telephones.

Each APM4 provides four dedicated DTMF receivers for decoding the dialed digits from the connected device. (Each analog port has a dedicated DTMF receiver.) To place calls, the analog device must provide DTMF tone signaling, which is decoded by the APM4 for call processing instructions. Each analog port provides twenty-five (25) – cycle, (frequency) ringing for the attached analog device.

Since each APM4 provides dedicated DTMF receivers and ringing generators, and because the system has a non-blocking digital ICM bus, the Single Line Telephones/Analog Devices are not traffic sensitive and do not require special traffic balancing.

Related Features

Single Line Telephone CO Line Flash

Related Programming

Call Handling - SLT Hook Flash (Reference Single Line Telephone – Flash)

Conditions

a) Any single line (2500 type) telephone equipment can be connected to the system using one of the standard analog ports available on the Analog Port Module (APM4).
b) Analog ports are dedicated to the Extension Directory Numbers system resource. These directory numbers can be changed in Database Administration.
c) The allocation of DTMF Receivers (required resource to receive dialed digits from analog devices) is one to one in the DX-80 system. That is, the system provides one (1) DTMF receiver per analog port for decoding DTMF signals dialed by analog devices/SLT users.

Speakerphone

Digital telephones of the DX-80 system are all equipped with a high-quality, half-duplex speakerphone. This feature makes it possible to place hands-free (conference room style) calls from any digital DX-80 telephone.

Related Features

CO Line calling
Intercom calling

Operation – Placing a Call

1. Press an idle CO Line button or dial an intercom number (see Condition c.)
2. The On/Off button LED immediately lights and the speakerphone is active.
3. Press the On/Off button to hang up the call. (Or lift the handset to convert the call from a hands-free speakerphone connection to a private handset connection.)

Operation – Answering a Call

1. While your digital phone is ringing, press the On/Off button.
2. The On/Off button LED immediately lights and the speakerphone is active.
3. Press the On/Off button to hang up the call. (Or lift the handset to convert the call from a hands-free speakerphone connection to a private handset connection.)

Conditions

a) The speakerphone function is impacted by environmental conditions.
b) Operation of the speakerphone in high-noise areas may yield less than adequate results. If this is the case in the area where your telephone is located, the handset may be used to improve connection conditions.
c) To dial intercom numbers directly from an idle condition, the Hot Key setting must be Enabled. Otherwise, the extension user must press a programmed Intercom Button or press the On/Off button prior to dialing the extension number.

Speed Dial – Extension/System

Speed Dialing allows you to store frequently dialed numbers. These numbers are accessed for dialing by the associated speed dial directory number (Speed Number Location). The directory number may be stored on any feature button for instant one-button operation.

Extensions may store up to fifty (50) personal (extension) speed numbers in memory. (At default 20 personal locations – numbered 470-489 are available for extensions 101-140). There are also two hundred (200) Speed Dial bins allocated for system-wide use (locations 500-699). System Speed Dial is programmed via Attendant Administration or via customer database programming.

You may choose to first press an idle CO line or you may let the system automatically select the line.

The DX-80 system can be programmed to allow System Speed Dial Numbers to override Toll Restriction settings (both CO Line and Extension COS).

Related Features

Class of Service – Extension
Toll Restriction
Flexible System numbering Plan
Flash
Pulse to DTMF Conversion
Attendant Administration
Tenant Groups
Pause

Related Programming

System Resource - Speed Number Assignment, Speed Number Programming
Call Handling - Dial Wait Time, Dial Delay Time, System Speed Toll Check

System Application - Individual Speed Number
System Application - System Speed Number

Operation – Setting up Extension Speed Dial Numbers

1. Press FEATURE 1.
2. Dial the Speed Dial location number (470~489).
3. Press [show]. The current contents of this speed dial number location are displayed.
4. Press [chg].
5. Input the number for this speed dial location including Pauses (FEATURE 7 PQRS 0 OPER), Flash (FEATURE 3 DEF) and Pulse To Tone Conversion (* TONE) codes.
6. Press [save]. That number is stored in this speed dial location.
7. Continue programming speed dial locations from step 2 above or hang-up (press the On/Off button twice) to exit.

Analog Ports (Single Line Telephones)

1. Dial # 1.
2. Dial the Speed Dial location number (470~489).
3. Input the telephone number.
4. Press {FLASH} (hook-switch flash).

Operation – Setting up System Speed Dial Numbers

1. Use Database Administration (see Programming below)

Or...

2. Use Attendant Administration (see Attendant Administration.)

Operation – System Automatically Selects the CO Line

1. Dial the Speed Dial location number (470-489, 500-699).
2. That speed dial number is dialed on any available CO Line.

Operation – You Select the CO Line

1. Press the appropriate CO Line button (or dial the CO Line directory number 740-755).
2. Press FEATURE 1.
3. Dial the Speed Dial location number (470-489, 500-699).
4. That speed dial number is dialed on the selected CO Line.

Conditions

a) The DX-80 system has 1000 speed dial number memory locations that are dynamically allocated to the system use (extensions individually via Extension Speed Dial Locations or all extensions system wide via System Speed Dial Locations).
b) Only a Digital Speakerphone can program System Speed Dial bins using Attendant Administration.
c) Speed bins may be chained.
d) Pauses and Flashes may be stored in Speed Dial.
e) Chaining, Pauses and Flashes each occupy one character position.
f) If you access an empty bin the display will show “SPEED NO. EMPTY.”

Default Settings

System Resource – SPD No. Assignment – System List is set to 200.
(Range is 0 to 1000.)

System Resource – SPD No. Assignment – Individual List is set to 20 for extensions 101-140. All others are set to 0. (Range is 0 to 50.)

System Resource – SPD No. Programming – System List; all bins are empty "NULL."

System Resource – SPD No. Programming – Individual List; all bins are empty "NULL."

(Note: Individual Speed Dial Numbers can be programmed at the extension or via PC-DBA. They cannot be programmed from Programming via the DET.)

System Application – Individual SPD No. – Length is "3." (Range is 1-4.)

System Application – Individual SPD No. – 470-489 assigned. (Range is any number per Numbering Plan.)

System Application – System SPD No. – Length is "3." (Range is 1-4.)

System Application – System SPD No. – 500-699 assigned. (Range is any number per Numbering Plan.)

Programming Abstract

- Use the Assignment to increase or decrease speed number assignments for each extension and/or system speed bins.
- Note that the total speed bin capacity of the system is 1000 bins regardless of how they are assigned.
- Change speed dial directory numbers if required using the Flexible Numbering Plan programming.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

To program SPD No. Assignment:

- Input 04-08, then press [save].
- Press [show], this advances to the Assignment for Individual Speed Dial numbers screen.
- Press [show] to change an extension's speed numbers assignment.
- Input the extension number to change assignments.
- Press [show], this advances to the Increase screen for this extension.
- Press [chg] to increase the assigned speed dial numbers for this extension.

Or...

- Press [next] to advance to the Decrease screen for this extension.
- Press [chg] to decrease the assigned speed dial numbers for this extension.
- Press [next] to advance and input another extension number.
- Press the Hold button to return to the previous menu level.

Or...

- Press [next], this advances to the Assignment for System Speed Dial numbers screen.
- Press [show].
- Input the Tenant Group for which changes are to be made. (Usually Tenant Group 1.)

- Press [show], this advances to the Increase screen for this Tenant Group System Speed List.
- Press [chg] to increase the number of allocated speed dial numbers (in increments of 50).

Or...

- Press [next] to advance to the Decrease screen for this Tenant Group System Speed List.
- Press [chg] to decrease the number of allocated speed dial numbers (in increments of 50).
- Press [next] to input a new Tenant Group and continue programming.
- Press the Hold button to return to the previous menu level or the Volume button (up or down) to return to the DB Item Select screen.

To program System Speed Numbers:

- Input 04-09-1~3, then press [save]. This advances to the System Speed Dial entry point for the Tenant Group selected.
- Input the speed dial number to program (500-699), then press [show]. The current stored number displays.
- Press [chg] to change this stored number.
- Input the new telephone number with special characters as required.

  Pause = FEATURE 7 PQRS 0 OPER

  Flash = FEATURE 3 DEF

  Pulse-To-Tone Conversion = * TONE.

  Speed Numbering Chaining = FEATURE + # + next speed number (500~699).
- Press [save]. The speed dial number and the new contents are displayed.
- Press [next].
- Input the next speed dial number to change and follow the conventions above.

Or...

- Press the Hold button to exit this programming and return to the previous menu level.

Then…

- Continue making other programming changes or exit the programming mode.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight “System Resource” and then press Enter.

To program SPD No. Assignment (allocation):

- Use ↓↑→← to highlight "SPD No. Assignment" and then press Enter.
- To allocate speed numbers in the System List:
  - Use ↓↑→← to highlight "System List" and then press Enter.
  - Use ↓↑→← to highlight the Tenant Group speed dial allocation under either the Increase or Decrease column.
  - Press Enter to increment the selected Tenant Group speed number allocation. Each time that enter is pressed allocation is incremented by 50.
  - When all changes are made press the ESC (escape) key to exit this database-programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
  - You will then be prompted to "Save Current Setting?"
    - Press "**N**" to abort changes and leave all data unchanged.
    - Press "**Y**" to save changes.
  - If you press "**Y**" (yes), you will then be prompted "File Exists, Override?"
    - Press "**N**" to abort changes and leave all data unchanged.
    - Press "**Y**" (yes) to continue with the save operation.
- To allocate speed numbers in the Individual List:
  - Use the cursor arrows to highlight "Individual List" and then press Enter.
  - Use the cursor arrows to highlight the extension speed dial allocation under either the Increase or Decrease column. (Use the Page Up or Page Down buttons to select extensions not viewed on this screen.)
  - Press Enter to increment the selected Tenant Group speed number allocation. Each time that enter is pressed allocation is incremented by 10.
  - When all changes are made press the ESC (escape) key to exit this database-programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
  - You will then be prompted to "Save Current Setting?"
    - Press "**N**" to abort changes and leave all data unchanged.
    - Press "**Y**" to save changes.
  - If you press "**Y**" (yes), you will then be prompted "File Exists, Override?"
    - Press "**N**" to abort changes and leave all data unchanged.
    - Press "**Y**" (yes) to continue with the save operation.

To program SPD Numbers:

Note: Both System and Individual Speed numbers can be programmed via PC-DBA.

- Use ↓↑→← to highlight SPD No. Programming then press Enter.

To program System SPD Numbers:

- Use ↓↑→← to highlight System SPD No. then press Enter.
- Use ↓↑→← to highlight the Tenant Group for which changes are to be made, then press Enter.
- Use ↓↑→← and the Page Up Page Down buttons to select the System Speed Dial number to change.
- Press Enter.
- Input the new telephone number with special characters as required.
  Pause = "**P**"
  Flash = "**/**" (forward slash button)
  Speed Numbering Chaining = "@" **+ next speed number (500-699).**
- Press Enter.
- Use ↓↑→← and the Page Up Page Down buttons to select the System Speed Dial number to change.
  - Use the conventions above to program other speed dial numbers.

- When all changes are made press the ESC (escape) key to exit this database-programming screen. You will see the prompt: “Exit This Feature”; press “**Y**” for yes.
- You will then be prompted to “Save Current Setting?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “File Exists, Override?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.

To program Individual SPD Numbers:

- Use ↓ ↑ → ← to highlight Individual SPD No. then press Enter.
- Input the extension directory number for which changes are to be made, then press Enter.
- Use ↓ ↑ → ← and the Page Up Page Down buttons to select the Speed Dial number to change.
- Press Enter.
- Input the new telephone number with special characters as required.
- Pause = “P”
- Flash = “/” **(forward slash button)**
- Speed Numbering Chaining = “@” + next speed number (470-489).
- Press Enter.
- Use the cursor arrows and the Page Up Page Down buttons to select the System Speed Dial number to change.
- Use the conventions above to program other speed dial numbers.
  - When all changes are made press the **ESC** (escape) key to exit this database-programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
  - You will then be prompted to “Save Current Setting?”
    - Press “**N**” to abort changes and leave all data unchanged.
    - Press “**Y**” to save changes.
  - If you press “**Y**” (yes), you will then be prompted “File Exists, Override?”
    - Press “**N**” to abort changes and leave all data unchanged.
    - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “**SEND**” **function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.**

Station Message Detail Recording (SMDR)

This feature allows the system administration to track all incoming and outgoing CO line traffic, chronologically by extension number. Account code data is output for each call record when entered to place a call. SMDR is output from the standard “SMDR” RS232 serial port located on the CPM (Central Processor Module). An external serial printer or call accounting device may be connected for permanent record keeping or call cost accounting. Each data record is output within the standard 80-character frame. Data communications is one direction only through the SMDR port and is programmable for data rate (baud rate) in database programming.

SMDR information includes CO line used, extension number, time and date the call was placed, number dialed, duration of the call, Ring Time to Answer, an account code if entered and a comment for special call handling record. The system will also provide ring-in duration and call processing information relative to the call as it was handled by the system.

In the case of incoming calls that are received with Caller ID (although this feature is a standard feature of the DX-80, a telephone company subscription is required), two records are output. The first output record lists the telephone

number of the calling party as it is received from the telephone company. (Calls from CID blocked numbers will not have a CID number associated with that record.) The second output record will show the callers name ("OUT OF AREA" or "PRIVATE" may appear in this field if the calling party number is unavailable due to one of these reasons.)

In the SMDR example below all data fields are defined with the associated field width. Following the definitions are sample records output from the SMDR port. (The two "I" records are one incoming call record received with caller ID.)

```
0        1         2         3         4         5         6         7
12345678901234567890123456789012345678901234567890123456789012345678901234567890
D EXT  TRK  DGT_DIALED           RING  DATE  TIME     DURATION ACCOUNT
  XXX  XXX  XXXX...XXXX          MM:SS XX/XX HH:MM:SS HH:MM:SS XXXXXXXX
O 101  741  3035551212           00:00 01/01 01:05:52 00:00:35
I 103  740  4802224545           00:13 01/01 01:07:51 00:00:39
I 103  740  JOHNSON LARRY        00:13 01/01 01:07:51 00:00:39
O 101  741  3035551212           00:00 01/01 01:13:52 00:00:15 12345678
```

Data Field

D = Call Direction (I = Incoming, O = Outgoing)
EXT = Extension number/Incoming DISA CO line number/Incoming ECF CO line number
TRK = CO line number, 2 digits with prefix 0
DGT_DIALED = Telephone number (outgoing call only, maximum 16 digits, left aligned)
RING = CO Line incoming ringing duration before answer (Incoming call only)
- MM = minute
- SS = second

DATE = Day/Month (DD/MM)
TIME = Start time of call connection
- MM = minute
- HH = hour
- SS = second

DURATION = Conversation time
- MM = minute
- HH = hour
- SS = second

ACCOUNT = Account code entered for billing purposes (maximum 8 digits, left aligned)
A carriage return (CR) is generated after each record output.

Default Settings

Extension – SMDR Output is set to "**Y**" (yes). (Range is Y/N.)
Call Handling – SMDR Call Output – Outgoing Call is set to "Y." (Range is Y/N.)
Call Handling – SMDR Call Output – Incoming Call is set to "N." (Range is Y/N.)
Call Handling – SMDR Call Output – Account Code is set to "Y." (Range is Y/N.)
System Resource – Modem & Serial Port – CIL X_Rate is set to "9600." (Range is 1200/2400…19200.)

Programming Abstract

- Set any extensions not to be recorded to "**N**" for the SMDR output.
- Set the conditions for call logging as required. (Outgoing Calls and/or Incoming Calls)
- Set the baud rate of the serial port to match the baud rate of the connected device.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays. (All database programming items are indexed for fast access. Note: Press the volume up or down bar to return to the DB Item Select screen at any time.)
- To program an extension for SMDR Output:

- Input 01-101~156-19, then press [save]. This advances to the SMDR Output programming screen for the extension selected.
- Press [chg] to change this database item. Each time that [chg] is pressed the value changes.
- Press the Volume button (up or down) to return to the DB Item Select screen.
- To program the SMDR Call Output – Outgoing Call:
- Input 03-30-01, then press [save]. This advances to the SMDR Output selection for Outgoing Calls.
- Press [chg] to change this database item. Each time that [chg] is press the value is changed.
- Press [next] to advance to SMDR Call Output – Incoming Call or press the Volume button (up or down) to return to the DB Item Select screen.
- To program the SMDR Call Output – Incoming Call:
- Input 03-30-02, then press [save]. This advances to the SMDR Output selection for Incoming Calls.
- Press [chg] to change this database item. Each time that [chg] is press the value is changed.
- Press the Hold button to exit this programming and return to the previous menu level or press the Volume button (up or down) to return to the Database Item Select screen.
- To program the SMDR Call Output – Account Code:
- Input 03-30-03, then press [save]. This advances to the SMDR Output for Account Codes.
- Press [chg] to change this database item. Each time that [chg] is press the value is changed.
- Press the Hold button to exit this programming and return to the previous menu level or press the Volume button (up or down) to return to the Database Item Select screen.
- To program the (CIL) Call Information Log serial port baud rate (**CIL X_RATE**):
- Input 04-16, then press [save]. This advances to the SMDR CIL port transmission rate setting.
- Press [chg] until the appropriate value displays.
- Press the Hold button to exit this programming and return to the previous menu level or press the Volume button (up or down) to return to the Database Item Select screen.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory, then press Enter.
- Press any key at the program title page (as requested) to enter the Main Menu.
- Select PC-DBA from the Main Menu.
- Select “Programming” from the PC-DBA Menu. The Database Programming menu is now displayed.
- To program an extension for SMDR Output:
  - Use the cursor positioning arrows to highlight “Extension” and then press Enter.
  - Use the cursor arrows to highlight “Category 2” and then press Enter.
  - Use the cursor arrows to highlight the database item “SMDR Output” for the Extension to be changed. (Note: You may need to use the Page Up/Down keys to view the extension for which changes are required.)
  - Press Enter. Each time that enter is pressed the value of this database item is updated.
  - When all changes are made press the ESC (escape) key to exit this database-programming screen. You will see the prompt: “Exit This Feature”; press “**Y**” for yes.
  - You will then be prompted to “Save Current Setting?”
    - Press “**N**” to abort changes and leave all data unchanged.
    - Press “**Y**” to save changes.

- If you press "**Y**" (yes), you will then be prompted "File Exists, Override?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press ESC (escape) again to return to the Database Programming menu.

- To program call logging conditions (Outgoing/Incoming/Account Code):
  - Use the cursor positioning arrows to highlight "Call Handling" and then press Enter.
  - Use the cursor arrows to highlight "Category 2" and then press Enter.
  - Use the cursor arrows to highlight the database item "SMDR Call Output – Outgoing/Incoming/Account Code" as required.
  - Press Enter. Each time that enter is pressed the value of this database item is updated.
  - Continue to make other changes to the Call Output settings as required.
  - When all changes are made press the ESC (escape) key to exit this database-programming screen. When you will see the "Exit This Feature?" prompt, press "**Y**" for yes.
  - You will then be prompted to "Save Current Setting?"
    - Press "**N**" to abort changes and leave all data unchanged.
    - Press "**Y**" to save changes.
  - If you press "**Y**" (yes), you will then be prompted "File Exists, Override?"
    - Press "**N**" to abort changes and leave all data unchanged.
    - Press "**Y**" (yes) to continue with the save operation.
  - Press ESC (escape) again to return to the Database Programming menu.
- To program the (CIL) Call Information Log serial port baud rate (CIL X_RATE):
  - Use the cursor positioning arrows to highlight "System Resource" and then press Enter.
  - Use the cursor arrows to highlight "Modem & Serial Port" and then press Enter.
  - Use the cursor arrows to highlight the database item "CIL X_Rate."
  - Press Enter. Each time that enter is pressed the value of this database item is updated.
  - When all changes are made press the ESC (escape) key to exit this database-programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
  - You will then be prompted to "Save Current Setting?"
    - Press "**N**" to abort changes and leave all data unchanged.
    - Press "**Y**" to save changes.
  - If you press "**Y**" (yes), you will then be prompted "File Exists, Override?"
    - Press "**N**" to abort changes and leave all data unchanged.
    - Press "**Y**" (yes) to continue with the save operation.
  - Press ESC (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: changes made via PC-DBA are NOT updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming Guide section of this manual to learn more about this procedure.

System Time and Date

The DX-80 system provides a built-in time clock to track System Time for reference in certain features such as System Night Service Mode Change, SMDR, Alarm Clock – System, Extension, and Time and Date display at Executive Speakerphones.

This clock is battery protected from power failure. System Time can be changed at any Digital Speakerphone using the attendant password.

Related Features

Attendant Administration
Automatic CO Line Ringing Modes
SMDR
Alarm Clock – System, Extension

Related Programming

System Application - Hour Mode, Time Switching
System Resource – Hour Mode
System Resource – Time settings

Conditions

System Time and Date must be set in Database Administration for proper display at digital Executive Speakerphones and all other time-sensitive feature operations.

Default Settings

Hour Mode set at "12" (Range is 12/24)
System Time – Year "99" (Range is 0-99)
System Time – Month "JAN" (Range is JAN~DEC)
System Time – Day "1" (Range is 1-31)
System Time – Weekday "FRI" (Range is SUN~SAT)
System Time – Hour "00" (Range is 0-23)
System Time – Minute "00" (Range is 0-59)

Programming Abstract

- Use Hour Mode to set the display format (12-hour or 24-hour format).
- Use the System Time programming to set the system clock to the correct time and date.
- Press ALT+T from any PC-DBA programming screen to view and change current settings.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays. (All database programming items are indexed for fast access. Note: Press the volume up or down bar to return to the DB Item Select screen at any time.)
- Input 08-03, then press [save]. This advances to the Hour Mode programming screen.
- Press [chg] to change to select 12/24 Hour Mode.
- Input 08-14, then press [save]. This advances to the System Time programming screen.
- Press [show], the Year database item displays.
- Press [chg] to change the year for the system clock.

Or…

- Press [next] to advance to the next system clock item that requires changes.
- Press [chg] and input data as required.
- Follow this convention for each of the database items for the system clock.
- Press the Hold button to exit System Time programming and return to the previous menu level.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory, then press Enter.
- Press any key at the program title page (as requested) to enter the Main Menu.

- Select PC-DBA from the Main Menu.
- Select “Programming” from the PC-DBA Menu. The Database Programming menu is now displayed.
- Use the cursor positioning arrows to highlight “System Application” and then press Enter.
- Use the cursor arrows to highlight “Category 1,” and then press Enter.
- Use the cursor arrows to highlight the database item “Hour Mode.”
- Press Enter. Each time that enter is pressed the value of this database item is updated.
- When all changes are made press the ESC (escape) key to exit this database-programming screen. You will see the prompt: “Exit This Feature”; press “**Y**” for yes.
- You will then be prompted to “Save Current Setting?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “File Exists, Override?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press ESC (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are NOT updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming Guide section of this manual to learn more about this procedure.

Tenant Groups

Tenant Groups allow for separation of system resources such that the DX-80 system can operate as though two or three separate systems are deployed at one site.

Tenant Group Assignments can facilitate complete isolation of extension functions. When extensions are assigned to their respective Tenant Group, calling characteristics between these groups can be customized to prohibit calling from one group to another. Often, full tenanting separations are not required (or desired) to allow isolated functionality of system resources (see CO Line Assignment, CO Line Ring Assignment, CO Line Receive Assignment for ideas on how to isolate system resources without invoking full isolated tenant operations).

Tenant Grouping allows for independent allocation of resource directory numbers. Designated directory numbers for all system resources interact only with the resources allocated to the specific tenant group. An example of this separation is Attendant designations. Attendant extensions are designated for each tenant group and act independently for the assigned tenant group. The designated Attendant Directory Number (usually “0”) is used regardless of tenant group assignment. When a tenant group 2 extension dials the Attendant Directory Number, the attendant designated extension for the same tenant group (2) is called.

Related Features

Attendant
Attendant/Extension DSS Console Button Programming
Speed Dial
Toll Restriction

Related Programming

Call Handling - Tenant Calling
CO Line - Tenant Group
Extension - Tenant Group

Conditions

a) When Tenant Calling is restricted from one tenant group to another tenant group, intercom calls, call transfers and recalling operations will not operated across these designations.
b) Extension directory numbers remain unique to system ports and are not duplicated for each Tenant Group. (Although extension dialing may be restricted across tenant group barriers.)

c) There are three tenant groups maximum in the DX-80 system.

Default Setting

Extension – Tenant Group, all extensions are set to Tenant Group 1. (Range is 1~3.)
CO Line – Tenant Group, all CO Lines are assigned to Tenant Group 1. (Range is 1~3.)
Call Handling – Tenant Calling, All Tenant Groups are allowed to dial intercom directory numbers of extensions in all other tenant groups. (Range is Y/N for each calling direction between tenant groups.)

Programming Abstract

- Program extensions for the tenant group.
- Program CO Lines for the tenant group.
- Program Tenant Group Calling is required.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program extensions into the tenant group:

- Input **01-101~156-02**. Then press [save]. This advances to the Tenant Group selection for the extension selected.
- Press [chg] until the appropriate tenant group for this extension displays.
  - Press the Hold button to enter a new extension to program.

Or…

  - Use the [back] or [next] button to skip to the appropriate database item.

Or…

  - Press the Volume button (up or down) to return to the DB Item Select screen.

Program CO Lines into the tenant group:

- Input **02-740~755-02**. Then press [save]. This advances to the Tenant Group selection for the CO Line selected.
- Press [chg] until the appropriate tenant group for this CO Line displays.
  - Press the Hold button to enter a new CO Line to program.

Or…

  - Use the [back] or [next] button to skip to the appropriate database item.

Or…

  - Press the Volume button (up or down) to return to the DB Item Select screen.

Program Tenant Group Calling:

- Input **03-29**. Then press [**save**]. This advances to Tenant Calling.
- Press [**show**].
- Input the Tenant Group for which changes are to be made. Then press [**show**]. The display shows the status of *calling allowed* settings from this tenant group to the tenant group displayed.

```
TO TENANT    1:Y
back next chg
```

  - Press [**chg**] to select "**N**" if calling to this tenant group is to be denied.

Or…

  - Press [**next**] to skip to the tenant group to program.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program extensions into the tenant group:

- Use ↓ ↑ → ← to highlight "Extension" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1" and then press Enter.
- Use ↓ ↑ → ← and Page Up Page Down to highlight "Tenant Group" for the appropriate extension to program.
- Press Enter until the appropriate tenant group number displays.
- Use ↓ ↑ → ← and Page Up Page Down to highlight "Tenant Group" for the next extension to program and continue as above until all extensions are programmed in the tenant groups.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program CO Lines into the tenant group:

- Use ↓ ↑ → ← to highlight "CO Line" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 1" and then press Enter.

- Use ↓ ↑ → ← and Page Up Page Down to highlight “Tenant Group” for the appropriate CO Line to program.
- Press Enter until the appropriate tenant group number displays.
- Use ↓ ↑ → ← and Page Up Page Down to highlight “Tenant Group” for the next CO Line to program and continue as above until all CO Lines are programmed in the tenant groups.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program Tenant Group Calling:

- Use ↓ ↑ → ← to highlight “Call Handling” and then press Enter.
- Use ↓ ↑ → ← to highlight “Tenant Calling” and then press Enter. The Tenant Group Calling screen and table displays. Intercom calling is allowed from one tenant group to another.
- Use ↓ ↑ → ← to highlight the “From” and “To” calling designation for the Tenant Group.
- Press Enter until the appropriate setting displays. (Calling is allowed/denied from the Tenant Group listed on the left to the Tenant Group listed across the top.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Toll Restriction – Class of Service

The DX-80 provides sophisticated monitoring of digits dialed on CO lines. The assignment of COS (Class Of Service) may be used for a broader range of call control than simple “Toll Restriction” implies. If a digit or range of digits dialed on a CO line is inconsistent with the dialing extension’s COS or CO Line COS the call is denied. This calling COS criteria can be applied to local calls, long distance calls and specific numbers that are considered allowed in areas where other numbers may be restricted.

The DX-80 provides a Toll Restriction table of 100 entries. Each entry may contain 10 digits in the “From” column and 10 digits in the “To” column. The From and To columns exist to apply a range of digits in a truth-table fashion known as digit Intervals. Extension COS and CO Line COS is then designated per table entry as Y/N. (E.g., does this table entry apply to this COS? Yes or No.) Extension and CO Line COS assignments for each table entry are provided

under the two conditions, Day and Evening mode. This allows each table entry to be assigned to each COS for CO Lines and extensions differently for these modes of system operation.

A table entry may be as simple as “From 0,” “To 0.” The result of this truth table is that calls associated to this COS are monitored for only the first digit dialed. If that digit is “0,” the call is allowed and no further restriction monitoring takes place.

A table entry of From “1813412,” To “1813450” will cause calls with this associated COS to be monitored for the first seven digits dialed or until the first digit inconsistent with this entry is dialed. A call dialed as 1813410 is denied when the digit “0” is dialed. A call dialed as 1813419+any digits, is allowed.

Related Features

Class of Service – Extension
Class of Service – CO Line
Speed Dial – System
Night Service Activate
DISA
Account Codes - Forced/Verified

Related Programming

Restriction – Toll Restriction – Digit Interval – From
Restriction – Toll Restriction – Digit Interval – To
Restriction – Toll Restriction – Digit Interval – Extension COS Day/Eve
Restriction – Toll Restriction – Digit Interval – CO Line COS Day/Eve
Restriction – Account Code Table (see Account Codes)
Extension - Day/Eve Class Of Service
CO Line Day/Eve Class Of Service
Call Handling - DISA

Default Settings

Restriction – Toll Restriction – Digit Interval 001 – From = “0.”
(Range is any digits, max. 10 in length.)
Restriction – Toll Restriction – Digit Interval 001 – To = “#.”
(Range is any digits, max. 10 in length.)
Restriction – Toll Restriction – Digit Interval 002~100 – From/To = “NULL” (none).
Restriction – Toll Restriction – Digit Interval – Extension/CO Line Day/Eve COS 0 = “Y.” (Range is Y/N.)
Restriction – Toll Restriction – Digit Interval 002~100 – Extension/CO Line Day/Eve COS 1-7 = “N.”
Extension - Day/Eve Class Of Service = “0.” (Range is 0~7.)
CO Line Day/Eve Class Of Service = “0.” (Range is 0~7.)

Conditions

a) Digit Interval 001 is programmed as: From “0,” To “#.” (This allows all digits to be dialed.)
b) There are one hundred (100) Interval Table entries available for programming.
c) System Speed can be set to Override toll restriction.

Programming Abstract

- Program Digit Intervals as required.
- Assign Digit Intervals to Extension/CO Line COS for Day and Eve modes as required.
- Assign Extension COS as required to follow the appropriate Digit Interval.
- Assign CO Line COS as required to follow the appropriate Digit Interval.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Digit Interval(s) and assign Extension/CO Line COS to Digit Intervals:

- Input **05-01-1~3-001~100** (where 1~3 is the Tenant Group and 001~100 is the Interval to program). Then press [save]. This advances to the "FROM" column of the tenant group and interval selected.
- Press [chg] to change the start of this interval range (beginning FROM…).
  - Input the new starting digit sequence, then press [save].
- Press [next] to advance to the "TO" column of the tenant group and interval selected.
- Press [chg] to change the end of this interval range (up …TO).
  - Input the new ending digit sequence, then press [save].
- Press [next] to advance to Extension or CO Line COS as required for change.
- Press [show]. The DAY Allowed parameter displays for the Extension or CO Line COS.
- Press [next] to advance to the EVE Allowed COS for the Extension or CO Line COS.

Or…

- Press [show] to program COS allowed settings for this Digit Interval. COS 0 displays.
- Press [next] and [back] until the appropriate COS to change displays.
- Press [chg] until the appropriate setting (Y/N) displays.
  - Press the Hold button to return to the previous menu level.

Or…

- Press the Volume button (up or down) to return to the DB Item Select screen.

Program Extensions for the COS to follow:

- Input **01-101~156-05~06** (where 101~156 is the Extension and 05 is DAY Class Of Service and 06 is EVE Class Of Service.)
- Press [chg] until the appropriate COS displays for the selected service mode.
  - Press the Hold button to return to the previous menu level.

Or…

- Press the Volume button (up or down) to return to the DB Item Select screen.

Program CO Lines for the COS to follow:

- Input **02-740~755-04~05** (where 740~755 is the CO Line and 04 is DAY Class Of Service and 05 is EVE Class Of Service.)
- Press [chg] until the appropriate COS displays for the selected service mode.
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.

- Select Programming from the PC-DBA menu. Then press Enter.

Program Digit Interval(s) and assign Extension/CO Line COS to Digit Intervals:

- Use ↓↑→← to highlight "Restriction" and then press Enter.
- Use ↓↑→← to highlight "Toll Restriction" and then press Enter.
- Use ↓↑→← and Page Up Page Down to highlight the "FROM" or "TO" column of the Digit Interval.
- Press Enter.
- Input the digit(s) to be monitored. (E.g., to restrict long distance and operator calls, input "2" in the From column and input "#" in the To column. Thereby eliminating "0" and "1" as possible first dialed digits.)
- Use ↓↑→← and Page Up Page Down to highlight the "Extension" or "CO Line" COS under the service mode "Day" or "Eve" for the Interval.
- Press Enter to select "**Y**" or "**N**" for this COS/Mode/Interval.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program Extensions for the COS to follow:

- Use ↓↑→← to highlight "Extension" and then press Enter.
- Use ↓↑→← to highlight "Category 1" and then press Enter.
- Use ↓↑→← and Page Up Page Down to highlight the COS Day or Eve of the extension for which changes are to be made.
- Press Enter until the appropriate COS assignment displays.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program CO Lines for the COS to follow:

- Use ↓↑→← to highlight "CO Line" and then press Enter.
- Use ↓↑→← to highlight "Category 2" and then press Enter.

- Use ↓ ↑ → ← to highlight the COS Day or Eve of the CO Line for which changes are to be made.
- Press Enter until the appropriate COS assignment displays.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Tone / Pulse / Inter-digit Duration Selection

Depending on the outside plant environment, type of Central Office, and customer's specialized dialing requirements, the DTMF "on" time (Tone) and Pulse Dialing – Pulse Time and Pulse Dialing – Inter-Digit Time for manually dialed or system automatically dialed digits may be modified. Typically, no modification is required however, in some installation environments where outside plant equipment is becoming antiquated or line conditions are poor, tone duration and/or inter-digit duration timing may be increased to offset these poor conditions.

Related Features

CO Line Signaling

Related Programming

Call Handling – Dialing Ratio – Break Time, Inter-Digit Time, Tone Time

Conditions

a) A longer tone duration or inter-digit duration time will cause a slower output of manual or automatic system-dialed numbers.
b) A longer DTMF "on" time and/or inter-digit tone time can be used to ensure more reliable interaction with remote voice mail and similar remote DTMF dial pad actuated devices.
c) At default DTMF duration is set to 70 milliseconds.

Default Setting

Call Handling – Dialing Ratio – Break Time = 60 ms (Range is: 60/67.)
Call Handling – Dialing Ratio –Inter-Digit Time = 800 ms (Range is: 400-800ms.)
Call Handling – Dialing Ratio –Tone Time = 70ms (Range is 70/90/120 ms.)

Programming Abstract

- Program changes to the Pulse Dialing operation (Break and Inter-Digit) as required.
- Program changes to the DTMF Tone Time as required.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program Pulse Dialing Break Time:

- Input **03-05,** then press [save]. This advances to Dialing Ratio.
- Press [show]. This advances to Break Time.
- Press [chg] to select the appropriate break time ratio (60/67).
- Press [next] to advance to pulse dialing Inter-Digit Time.
- Press [chg] to select the Pulse Dialing Inter-Digit Time.
- Press [next] to advance to Tone Time.
- Press [chg] to select the appropriate DTMF Tone Time (this time is also used for DTMF inter-digit timing).
- Press the Hold button to return to the previous menu level or press the Volume button to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓ ↑ → ← to highlight "Call Handling" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 2" and then press Enter.
- Use ↓ ↑ → ← to highlight "Break Time," "Inter-Digit" or "Tone Time."
- Press Enter until the appropriate value displays.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Touch Tone On/Off

FEATURE # 1

Touch Tone On/Off can be used to customize a users telephone tactile response of dial pad key operation. At default (factory setting), Touch Tone is ON. While ON, anytime the dial pad button/keys are pressed the telephone will emit a subtle beep tone as an assurance that this button operation was successful. Since this confirmation may not always be necessary, the tone can be turned off.

Related Features

All features accessed using the Dial Pad.

Operation – Setup

1. While the telephone is idle, press FEATURE # 1.
2. The current mode is toggle to the opposite setting.
3. Repeat these steps to select the appropriate mode of operation.

Transfer

TRANSFER

Transfer is used to deliver calls at your extension to another extension while maintaining the privacy of the connection. This means that calls can be routed to DX-80 system destinations (Extensions, UCD Groups, Virtual Numbers, etc.) in such a way that the wrong party cannot easily intercept them.

There are two (2) types of transfer you may use: Screened/Supervised Transfer and Unscreened/Unsupervised Transfer. Supervised Transfer means that before the transfer is completed, the call is announced to the destination extension. This transfer method provides the transferring party with the option to reroute the call being transferred if the selected destination is determined not appropriate. Unsupervised Transfer simply delivers the call to the destination selected regardless of the destination readiness to accept the call.

When you complete a transfer the outside line is placed on Exclusive Hold and can be retrieved only at your telephone or the telephone where you transferred the call.

Calls that are transferred are subject to a unique transfer recall time. Transferred calls that go unanswered at the destination will recall (ring) to the transferring party when this timer expires. There are two recall timers that affect transferred calls: Transfer-Busy Recall Time and Transfer-Idle Recall Time. Idle and Busy represent the status of an extension for unsupervised transfer scenarios. (If the extension destination is busy, the Transfer-Busy Timer is used. If the extension destination is idle, the Transfer-Idle Timer is used.)

Related Features

Transfer and Answer Call
Call Forward
Call Park / Call Park Answer
Recall
Forced Intercom Tone Ring

Related Programming

Call Handling - XFR_I Recall, XFR_B Recall

Operation – Unsupervised Transfer

1. While connected to a call (CO Line or intercom extension):
   a. Press the Transfer button.
   b. Dial the destination directory number where this call is to be transferred (extension, UCD Group, Virtual Number, etc.)

Or...

   a. Press the feature button programmed for the destination directory number.
2. Hang up (go on-hook) to complete the transfer.

Operation – Supervised Transfer

1. While connected to a call (CO Line or intercom extension):
   a. Press the Transfer button.
   b. Dial the extension destination directory number where this call is to be transferred.

Or...

   a. Press the feature button programmed for the destination extension number.
2. Wait for the called extension to answer the intercom call. Announce the transfer.
3. Hang up (go on-hook) to complete the transfer.

Analog Ports (Single Line Telephones)

1. While connected on a call (CO Line or intercom extension), press {FLASH} (hook switch flash).
2. When you hear dial tone, dial the destination to which you want to transfer the call (extension, UCD Group, Virtual Number, etc.).
3. To screen the call, wait for the called extension to answer. Otherwise, hang up to complete the transfer.

Conditions

a) Transferred CO Lines that recall are placed on system hold at the time the recall occurs.
b) When a transferred CO line recalls, the line number and extension number where the call was transferred will be displayed.
c) The transferred connection party will hear ring-back tone while the call is transfer ringing.
d) CO Line calls and intercom calls may be transferred.
e) In screened transfer, if the destination extension answers your intercom call in Voice Announce Hands-free mode and does not go off hook, the transferred connection will transfer ring at that extension.
f) In screened transfer, if the destination extension answers your intercom call by lifting the handset, the transferred connection is connected to the destination extension immediately when the transfer operation is complete.

Default Settings

Call Handling – XFR_I Recall (Transfer – Idle Recall) is set to “30” seconds.
(Range is 16/30/60/90/120 seconds.)

Call Handling – XFR_B Recall (Transfer – Busy Recall) is set to “60” seconds.
(Range is 16/30/60/90/120 seconds.)

Programming Abstract

Program the recall time for calls that are transferred to an Idle Extension and for calls that are transferred to a Busy Extension.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays. (All database programming items are indexed for fast access. Note: Press the volume up or down bar to return to the DB Item Select screen at any time.)
  - Input 03-10, then press [save]. This advances to the Transfer-Idle Recall programming screen.
  - Press [chg] until the appropriate value for this data item displays.
  - Press [next] to advance to the next data item or exit programming.

Or…

- Input 03-11, then press [save]. This advances to the Transfer-Busy Recall programming screen.
- Press [chg] until the appropriate value for this data item displays.
- Press [next] to advance to the next data item or exit programming.

- Press the Hold button to exit DISA programming and return to the previous menu level.
- Continue making other programming changes or exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program extensions into the tenant group:

- Use ↓↑→← to highlight "Call Handling" and then press Enter.
- Use ↓↑→← to highlight "Category 1" and then press Enter.
- Use ↓↑→← to highlight "XFR_I Recall" or "XFR_B Recall" as necessary for change.
- Press Enter until the appropriate value displays.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "Exit This Feature"; press "**Y**" for yes.
- You will then be prompted to "Save Current Setting?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "File Exists, Override?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Transfer and Answer Call

FEATURE 6 MNO 8 TUV

Transfer and Answer is a convenience feature that speeds the process of completing a transfer and answering a ringing call by making the operation possible by one button. (This feature must be used from a feature button that has been designated for the purpose.)

When a busy extension user (secretary or attendant) is in the process of transferring a call and another call rings in, the Transfer/Answer button can be pressed to complete the transfer and answer the ringing call at the same time.

Related Features

Transfer

Flexible Feature Button Programming

Operation – Setup

Program an available Feature Button for the Transfer/Answer code operation. (Reference Flexible Feature Button Programming)

Operation – Use

1. While on a CO Line call and another call is ringing, initiate the transfer process.
    a. Press the Transfer button.
    b. Dial the destination intercom extension number.

Or...

    a. Press the DSS button of the destination extension number.
2. Press the Transfer/Answer button. The transfer is completed and the ringing call is answered.

Conditions

Ringing calls must be ringing at your extension for feature to operate.

UCD / Hunt Groups (1~24) 410~433 (Linear/Distributed/All Ring)

UCD (Uniform Call Distribution) is an incredibly flexible function of the DX-80 system. Simply stated, UCD Grouping allows system resources (primarily extensions) to be linked for call handling. The DX-80 has 24 UCD Groups. Each group has a lead (or pilot) number. This is the access point of the UCD Group. Extensions may call a group of extensions by dialing the associated UCD Group number. Calls may also be transferred to UCD Groups for handling by one of the UCD Group Members. UCD Group Members are often referred to as “Agents.” The use of Agent and Member in this material is synonymous.

The DX-80 allows each UCD Group to be configured in one of three ways:

- Linear
- Distributed
- All Ring

When configured as “**Linear**” the UCD Group functions such that calls to the group or calls transferred to the group are routed to the group members beginning with the first member every time. That is, the first Member of a Linear UCD Group will be the primary answering point for all calls received by this group. Each subsequent Member receives calls only when the previous Member(s) are unavailable to take a call. (Unavailable is determined by the following status’ Busy, DND active, Agent Log Off active, or when calls to the member go unanswered.)

When configured as “**Distributed**” the UCD Group functions such that calls to the group or calls transferred to the group are routed to group members in a uniformly distributed fashion. That is, each new call is routed to the next available UCD Member such that previous call routing is retained. If the third UCD Group Member handled the last call into the UCD Group, the next call to this UCD Group will be routed to UCD Group Member 4 regardless of the status of other UCD Group Members. (Assuming Member 4 is available.) (Unavailable is determined by the following status’ Busy, DND active, Agent Log Off active, or when calls to the member go unanswered.)

When configured as “**All Ring**” the UCD Group functions such that calls to the group or calls transferred to the group are routed to all group members simultaneously. That is, for each call into the UCD Group, all available members ring. (Unavailable is determined by the following status’ Busy, DND active, Agent Log Off active, or when calls to the member go unanswered.)

UCD Group call handling is greatly enhanced by waiting call provisioning. While a caller waits for a UCD Group Member to answer (in queue), several queued call operations are possible. These are:

No Answer – Member advancement
Overflow 1 Destination programming
Overflow 2 Destination programming
Overflow Count programming
Reroute Destination programming

No Answer Member Advancement: each UCD Group has a No Answer Timer. This timer can be set to advance a call from one UCD Group Member to the next when the ringing member does not answer the call within the time allotted.

Overflow 1 Destination: each UCD Group has an Overflow 1 Timer and Destination. This timer can be set to determine how long the queued call will remain in queue before being routed to the Overflow 1 Destination. The Destination can be an extension responsible for handling calls that remain in queue too long or a voice announcement device. Recorded Announcement devices can be used to play recorded messages to callers waiting in queue. (Typically, “all agents are still busy - please continue to hold.”) Overflow 1 Destination can be played one time only. (For high traffic scenarios a recorded Voice Announcement UCD Group can be used to play the same message to multiple callers.)

Overflow 2 Destination: each UCD Group has an Overflow 2 Timer and Destination. This timer can be set to determine how long the queued call will remain in queue following the Overflow 1 Timer before being routed to the Overflow 2 Destination. (Overflow 1 Timer plus Overflow 1 Destination recorded message time plus Overflow 2 Timer.) The Destination can be an extension responsible for handling calls that remain in queue too long or a voice announcement device. Recorded Announcement devices can be used to play recorded messages to callers waiting in queue. (Typically, “please continue to hold to reserve your place in queue.”) (For high traffic scenarios a recorded Voice Announcement UCD Group can be used to play the same message to multiple callers.)

Overflow Count: Each UCD Group has an Overflow Count that is associated to the Overflow 2 Timer. This counter can be set to allow a specific number of times that the Overflow 2 Timer may repeat. For each cycle of the Overflow 2 Timer the Overflow 2 Destination recording is played. If a call remains in queue so long that the Overflow Count counter expires, this call is routed to the programmed Reroute Destination.

Reroute Destination: Each UCD Group has a Reroute Destination. This can be programmed with an extension number and is used to remove this call from UCD Group queue and route the call for immediate handling.

Related Features

CO Line Ring Assignment
Flexible System Numbering Plan
UCD Agent Log On/Log Off
UCD Overflow
UCD Reroute Destination
UCD Voice Announce Group
Voice Mail - Digital Integration
Recorded Announcement Devices

Related Programming

CO Line - Answering Position
Extension Application - Uniform Call Distribution
System Application - Numbering Plan - Ext Hunt Group

Operation

- Calls can be transferred to a UCD Group.
- Intercom calls can be made to a UCD Group.
- Use the instructions for Intercom calling and Transfer to invoke these operations.
- UCD Group Directory numbers are 410-433 (By default.) These numbers may be dialed as though they are extension numbers.

Conditions

a) CO Lines may be assigned to ring directly into UCD Groups (see CO Line Ring Assignment).
b) Overflow Destinations and Reroute Destinations may be programmed for use with the integrated voice mail system. When doing so, program UCD Group 433 as the Destination for each of these entries. This routes the associated, queued caller to the DX-80 VM system where recorded announcements can be stored replayed to UCD callers waiting in UCD Queue. (See DX-80 Voice Mail Integration for details. Not part of this manual.)
c) When the DX-80 Voice Mail system is installed, it uses UCD Group 24. Therefore this UCD Group is not available for any other purpose when the ICD Voice Mail system is equipped.

Default Setting

CO Line – Answering Position = no UCD Groups are assigned for CO Line ringing.
System Application – Numbering Plan - Ext Hunt Group
Extension Application – UCD – Attribute = UCD (Range is: UCD/V.A.)
Extension Application – UCD – Tenant Group = 1 (Range is: 1~3.)
Extension Application – UCD – Name = NULL (Range is: 7 characters)
Extension Application – UCD – Member 1~24 = NULL (Range is: any extension number)
Extension Application – UCD – Hunting Method = Linear
(Range is: Linear/All Ring/Distributed.)
Extension Application – UCD – No Answer Timer = 10 (Range is: 5~60 sec.)
Extension Application – UCD – Overflow 1 Timer = 0 (Range is: 0~255.)
Extension Application – UCD – Overflow 1 Destination = NULL
(Range is: UCD Group or extension directory number.)
Extension Application – UCD – Overflow 2 Timer = 0 (Range is: 0~255.)
Extension Application – UCD – Overflow 2 Destination = NULL
(Range is: UCD Group or extension directory number.)
Extension Application – UCD – Overflow Count = 1 (Range is: 1~128.)
Extension Application – UCD – Reroute Destination = NULL
(Range is: UCD Group or extension directory number.)

Programming Abstract

- See CO Line Ringing Assignment to program a UCD Group number as a CO Line Answering Position.
- See Flexible Numbering Plan to program changes to the directory numbers used to access UCD Groups.
- Program extensions into UCD Groups as required.
- Program UCD Group call handling required via Overflow and Reroute functions.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input the code to go to the specific database item to change per the list:
- 06-01-01~24 (UCD Group)
  - Press [save]
- 06-01-01~24-01 (UCD Group select Tenant number)
  - Press [chg] to select the Tenant number to which this UCD Group is to be associated.
  - Press [next].
- 06-01-01~24-02 (UCD Group select Attribute)
  - Press [chg] to select the Attribute for this UCD Group.
  - Press [next].
- 06-01-01~24-03 (UCD Group select Member(s))
  - Press [show].
  - Press [next], [back] to choose the Member to program.
  - Press [chg].
  - Input the extension directory number of the extension to assign as a Member.

- Press [**save**].
- Repeat from [**next**], [**back**] for additional Members.
- Press the Hold button when you have finished entering members.
- Press [**next**].

- 06-01-01~24-03-01~24 (UCD Group select specific Member)
  - Press [**chg**].
  - Input the extension directory number of the extension to assign as a Member.
  - Press [**save**].
  - Press [**next**], [**back**] for additional Members.
  - Repeat from Press [**chg**].
  - Press the Hold button when you have finished entering members.
  - Press [**next**].
- 06-01-01~24-04 (UCD Group select Hunting Method)
  - Press [**chg**] to select the Hunting Method for this UCD Group.
  - Press [**next**].
- 06-01-01~24-05 (UCD Group input No Answer Time)
  - Press [**chg**].
  - Input appropriate No Answer Time.
  - Press [**save**].
  - Press [**next**].
- 06-01-01~24-06 (UCD Group select Overflow 1 Timer)
  - Press [**chg**].
  - Input appropriate Overflow 1 Timer.
  - Press [**save**].
  - Press [**next**].
- 06-01-01~24-07 (UCD Group input Overflow 1 Destination)
  - Press [**chg**].
  - Input appropriate Overflow 1 Destination.
  - Press [**save**].
  - Press [**next**].
- 06-01-01~24-08 (UCD Group select Overflow 2 Timer)
  - Press [**chg**].
  - Input appropriate Overflow 2 Timer.
  - Press [**save**].
  - Press [**next**].
- 06-01-01~24-09 (UCD Group input Overflow 2 Destination)
  - Press [**chg**].
  - Input appropriate Overflow 2 Destination.

- Press [save].
- Press [next].

- 06-01-01~24-10 (UCD Group select Overflow Count)
  - Press [chg].
  - Input appropriate Overflow Count.
  - Press [save].
  - Press [next].
- 06-01-01~24-11 (UCD Group input Reroute Destination)
  - Press [chg].
  - Input appropriate Reroute Destination.
  - Press [save].
  - Press [next].
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.
- Use ↓↑→← to highlight "Extension Application" and then press Enter.
- Use ↓↑→← to highlight "Uniform Call Distribution" and then press Enter.
- Input the UCD Group to program 1-24. Then press Enter.
- Use ↓↑→← to highlight "**Attribute**."
  - Press Enter to select the appropriate attribute for this UCD Group.
- Use ↓↑→← to highlight "**Tenant Group**."
  - Press Enter to select the appropriate tenant group for this UCD Group.
- Use ↓↑→← to highlight "**Name**."
  - Press Enter.
  - Input the name for this UCD Group. Then press Enter.
- Use ↓↑→← to highlight "**Member**."
  - Press Enter.
  - Use ↓↑→← to highlight "**MemX**" (the Member to program). Then press Enter.
  - Input the extension number for this Member. Then press Enter.
  - Repeat from use ↓↑→← to highlight "**MemX**" for all member to be programmed.
  - When finished programming members, press Esc.
  - When prompted to "Exit this Feature," press "**Y**" (yes).

- Use ↓↑→← to highlight "**Hunting Method**."
  - Press Enter to select the appropriate Hunting Method for this UCD Group.
- Use ↓↑→← to highlight "**No Answer Timer**."
  - Press Enter.
  - Input the appropriate No Answer Timer for this UCD Group. Then press Enter.
- Use ↓↑→← to highlight "**Overflow 1 Timer**."
  - Press Enter.
  - Input the appropriate Overflow 1 Timer for this UCD Group. Then press Enter.
- Use ↓↑→← to highlight "**Overflow 1 Dest.**"
  - Press Enter.
  - Input the appropriate Overflow 1 Destination for this UCD Group. Then press Enter.
- Use ↓↑→← to highlight "**Overflow 2 Timer**."
  - Press Enter.
  - Input the appropriate Overflow 2 Timer for this UCD Group. Then press Enter.
- Use ↓↑→← to highlight "**Overflow 2 Dest.**"
  - Press Enter.
  - Input the appropriate Overflow 2 Destination for this UCD Group. Then press Enter.
- Use ↓↑→← to highlight "**Overflow Count**."
  - Press Enter.
  - Input the number of times that Overflow 2 Destination should be played (RAD) for this UCD Group. Then press Enter.
- Use ↓↑→← to highlight "**Re_Route Dest.**"
  - Press Enter.
  - Input the appropriate Reroute Destination for this UCD Group. Then press Enter.
- Press Esc to go to the previous menu level and program another UCD Group as above.
- Continue making programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

UCD Agent Log Off/Log On

FEATURE 9 WXYZ 1

UCD Agent Log Off/Log On is a subset of Uniform Call Distribution. That is, it applies only to extensions that are programmed "Members" or Agents of predefined (programmed) UCD Groups. An extension that is a member of an UCD Group may temporarily invoke Agent Log Off to discontinue his extension relationship to the UCD Group. When Agent Log off is invoked UCD Group Queuing *skips* this extension for calls that are in the associated UCD Group Queue.

Agent Log Off/On can be invoked to remove an extension from participation in the UCD Group while at the same time allowing uninterrupted use of all other extension features. (Non-UCD Group ringing is unaffected by the Agent Log Off/On function.)

Agent Log Off/On is usually invoked at a UCD Group extension when that extension user is on break or not manned (employee "shift" cycles etc.)

UCD Group Agent Log Off is possible at any number of UCD Group extensions, however one Agent (Member) must be Logged On at all times. (The DX-80 will not allow all UCD Group Members to Log Off simultaneously.)

Related Features

Uniform Call Distribution

Flexible Feature Button Programming

Operation

1. While the extension is idle, the UCD Group Agent presses FEATURE * TONE 9 WXYZ 1 to log on or FEATURE 9 WXYZ 1 to log off.
2. The display will momentarily indicate the new Agent Status (Log On or Log Off).

Note: A Flexible Feature Button programmed with the code FEATURE 9 WXYZ 1 can be toggled for Agent Log Off / Log On.

Conditions

If a Flexible Feature Button is programmed as the Agent Log Off/On button, the LED associated to the button will light steady red to indicate the Log Off condition is set.

UCD Overflow and Reroute

UCD Overflow and UCD Reroute are directly related to Uniform Call Distribution. The DX-80 system allows for flexible handling of callers waiting in UCD queue (waiting to be answered by an UCD Group Agent). UCD Overflow can be applied in two ways. First it can be a simple UCD-external destination where callers in queue are routed following some predetermined time. The second (more comprehensive) application is to utilize Overflow Destinations in association with the optional built-in voice mail module or ancillary (third-party) recorded announcement device.

In the first (simplest) application callers waiting in queue are routed to another DX-80 extension. In this mode of operation, the caller is immediately removed from the UCD Agent Queue and delivered to the Overflow Destination for handling. Other callers in UCD Queue *move-up* in their respective UCD queue position to reduce the time-to-answer for their call.

The second (most comprehensive) application allows for a more sophisticated handling of callers in UCD Queue. The use of RAD (Recorded Announcement) devices provides a means to deliver information to the caller in queue without removing the caller from their respective position in queue. The most effective implementation of RAD use is to deploy the DX-80 built-in voice-processing module.

Overflow in a RAD environment can utilize two announcements as part of the UCD Group queue announcements. To accomplish this, there are two "Overflow Destinations." Each has an associated timer that designates *time-in-queue* prior to the announcement.

Overflow Destination 1 can be played one time only. The Overflow Destination 2 can be repeated at the "*time-in-queue*" interval. It is possible to repeat the Overflow Destination 2 announcement 1~128 times. Careful consideration should be taken when invoking this function since the caller bares the burden of these decisions.

The final step in handling of callers in UCD Queue is the Reroute Destination. This is provided as an exit from the UCD Queue. Reroute is the least preferred final point of action for a caller in queue. (Most callers would prefer to speak with one of the UCD Group Agents.) Reroute is usually an UCD-external extension designated to handle callers who have waited for a longer than anticipated period of time in UCD Group Queue. When a caller is routed to the Reroute Destination they are removed from UCD Group Queue. Although a RAD can be used to handle these calls, the RAD is the final process. That is, when the RAD announcement is finished, the caller is disconnected. (This is why Reroute is usually a designated extension that can further process the call.)

Related Features

Uniform Call Distribution Groups

DX-80 Hard Drive Voice Mail (PN7243)

Related Programming

Extension Application – Uniform Call Distribution – Overflow 1 Timer
Extension Application – Uniform Call Distribution – Overflow 1 Destination
Extension Application – Uniform Call Distribution – Overflow 2 Timer
Extension Application – Uniform Call Distribution – Overflow 1 Destination
Extension Application – Uniform Call Distribution – Reroute
Extension Application – Uniform Call Distribution – Overflow Count
DX-80 Hard Drive Voice Mail Module PN7243 (see programming instructions)
Extension – Port Type
Extension Application – Uniform Call Distribution – Attribute

Conditions

a) In a RAD application, Overflow Destination 1 is usually recorded as; “All agents are busy assisting other callers. Please continue to hold.”

b) In a RAD application, Overflow Destination 2 is usually recorded as; “All agents are still busy, please continue to hold. Calls will be handled in the order that they were received.”

c) In a RAD application that uses the DX-80 VP (PN7243) the caller may be routed to a menu box for further routing. (Please refer to the instructions in the DX-80 VP manual.)

d) In a RAD application the uses the DX-80 VP Overflow and Reroute destinations are the following voice mail boxes:

Table of UCD Group Overflow and Reroute Destination Announcement Boxes in DX-80 PC-8 (more may be created if required)

UCD Overflow	UCD Group 1	UCD Group 2	UCD Group 3	UCD Group 4	UCD Group 5
Overflow 1	3101	3102	3103	3104	3105
Overflow 2	3201	3202	3203	3204	3205
Overflow 3	3301	3302	3303	3304	3305

Default Setting

Extension Application – Uniform Call Distribution – Overflow 1 Timer = 0
(Range is 0-255 sec.)
Extension Application – Uniform Call Distribution – Overflow 1 Destination = NULL
Extension Application – Uniform Call Distribution – Overflow 2 Timer = 0
(Range is 0-255 sec.)
Extension Application – Uniform Call Distribution – Overflow 1 Destination = NULL
Extension Application – Uniform Call Distribution – Reroute = NULL
Extension Application – Uniform Call Distribution – Overflow Count = 1 (Range is 1-128.)
DX-80 Voice Processing Module PN7243 (see programming instructions)
Extension – Port Type = EXT (Range is Ext/V.A.)
Extension Application – Uniform Call Distribution – Attribute = UCD (Range is UCD/V.A.)

Programming Abstract

- Determine if the UCD Group Overflow destinations will be an extension of a recorded announcement device.
- Program Overflow 1 Timer for the interval that a caller will remain on hold before hearing the first Overflow announcement (or before she is routed to the overflow extension).
- Program the Overflow 1 Destination (extension or RAD Device). If the destination is a third-party RAD device that is connected to a DX-80 analog port, that port number must be programmed here. If the destination is the DX-80 VP, the DX-80 VP directory number must be programmed here (usually 433).
- Program Overflow 2 Timer and Destination similarly to Overflow 1. Overflow 2 Timer will result in the interval following Overflow 1 and the interval between repeating Overflow 2.
- Program the Overflow Count. (Number of times a caller in UCD Group Queue will hear the Overflow 2 announcement.)
- Program the Reroute Destination. (Destination to route caller after she has heard the Overflow 2 announcement "*Overflow Count*" times.
- If third-party RAD devices are used for RAD announcements, program those ports as Port Type "V.A."
- If third-party RAD device traffic is expected to be high, program analog ports of type "V.A." into an available UCD Group and program that UCD Group as Attribute "V.A."

Programming

Reference Uniform Call Distribution/Hunt Group for specific programming details.

UCD Voice Announce Group

The DX-80 system allows for the use of UCD Groups as a means of handling high traffic into third-party ancillary RAD devices. Whenever the Overflow destinations of a UCD Group require the use of multiple ancillary devices to handle the call traffic of announcements while callers are in UCD queue, these devices can be "*pooled*" in a group (available UCD Group) for access. Doing so allows any of the available devices to handle waiting calls with the same announcement.

Related Features

Uniform Call Distribution Groups

Recorded Announcement Devices

Related Programming

Extension Application – Uniform Call Distribution – Attribute
Extension Application – Uniform Call Distribution – Members
Extension – Port Type

Conditions

a) All V.A. UCD Group Members must be assigned as Port Type "V.A."
b) All ancillary RAD Devices must be recorded individually for the same announcement.
c) This is not required when using the DX-80 VP system for UCD Overflow announcements.

Default Setting

Extension Application – Uniform Call Distribution – Attribute = UCD (Range is UCD/V.A.)
Extension Application – Uniform Call Distribution – Members = NULL
Extension – Port Type = "EXT" (Range is EXT/V.A./VM)

Programming Abstract

- Select the UCD Group to be used as the V.A. (Voice Announcer) UCD Group.
- Program the analog ports connected to RAD Devices as Port Type "V.A."
- Program the analog RAD ports into the V.A. UCD Group.
- Program the V.A. UCD Group as the Overflow Destination for the UCD Group.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program analog extension port as Type "V.A.":

- Input 01-nnn-21, then press [save]. (Where "nnn" is the extension number of the analog port connected to an ancillary RAD Device.) This advances to the selected extension Port Type database item.
- Press [chg] until the appropriate port type displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.
- Continue programming analog extensions as port type "V.A." as required.
- Press the Hold button to return to the previous menu level or press the Volume button(up or down) to return to the DB Item Selection screen or exit programming.

Program the Voice Announcer UCD Group:

- Input 06-01-01~24-02, then press [save]. This advances to the selected UCD Group (01~24) Attribute database item.
- Press [chg] until the appropriate attribute (V.A.) displays.
- Press [next]. This advances to the Member database item for this UCD Group.
- Press [show]. This advances to the first (of twenty-four) Member of this UCD Group.
- Use [back] and [next] to select the UCD Group Member for programming.
- Press [chg].
- Input the extension directory number of the analog extension to assign as this V.A. UCD Group Member.
- Press [save].
- Repeat from [next], [back] for additional Members.
- Press the Hold button when finished entering members.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program analog extensions as port type "V.A.":

- Use ↓↑→← to highlight "Extension." Then press Enter.
- Use ↓↑→← to highlight "Category 2." Then press Enter.
- Use ↓↑→← and Page Up Page Down to highlight "Port Type" for the analog extension to program.
- Press Enter until the appropriate Port Type (V.A.) displays.
- Continue programming port type for other analog extensions as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program the Voice Announcer UCD Group:

- Use ↓↑→← to highlight "Extension Application." Then press Enter.
- Use ↓↑→← to highlight "Uniform Call Distribution." Then press Enter.
- Input the UCD Group number to be used as the V.A. Group, then press Enter. This advances to the selected UCD Group with the cursor positioned on the "Attribute" database item.
- Use ↓↑→← to highlight "Members." Then press Enter. This advances to this UCD Group Members database screen.
- Use ↓↑→← to highlight the Member to be changed. Then press Enter.
- Input the extension directory number of the analog extension to be programmed as a member of this UCD Group. Then press Enter.
- Continue making programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Voice Announce – Hands-free Reply

FEATURE 9 WXYZ 8 TUV

The Digital Speakerphone provides the ability to receive incoming intercom calls in Voice Announce Hands-free mode. When your telephone is in this mode, you can reply to an intercom call by using the speakerphone.

You may also choose to place your Digital Speakerphone in Voice Announce - Privacy mode. In this mode, you can hear the person intercom calling you but your Digital Speakerphone's microphone remains muted so the person calling cannot hear you. Therefore calls may be announced to your extension while maintaining a private environment.

In addition to Voice Announce – Hands-free and Voice Announce – Privacy modes a third mode is available called Tone Ring mode. When Tone Ring mode is active, the telephone will tone ring whenever an intercom call is made to that telephone.

Each time the feature code FEATURE 9 WXYZ 8 TUV is dialed, the next mode in sequence is selected, the associated tone is heard and associated visual indications are given. Refer to the table below.

Mode	Button Lamp	Momentary Display Confirmation	Confirmation Tone Heard	Status Bar (when intercom call is received)
Voice Announce – Handsfree	Green lamp	VA-HF MODE	single burst tone	Solid Red lamp
Voice Announce – Private	Red lamp	VA-PRIVACY MODE	single burst tone	Slow Flashing Red lamp
Tone Ring Mode	No lamp lit	TONE RING MODE	single burst tone	Fast Flashing Green lamp

Related Features

Distinctive Ringing – Extension
Forced Intercom Tone Ring
Do Not Disturb

Voice Call Recorder (via Voice Mail System)

FEATURE 6 MNO 7 PQRS

The Voice Call Recorder function is directly related to the digitally integrated DX-80 Voice system. This feature allows you to record external (CO Line) conversations. When the Voice Recorder is activated, a connection is established between your extension and the DX-80 Voice system. The conversation is recorded in your extension voice mailbox.

Related Features

Automatic Record
Voice Mail – Digital Integration

Related Programming

Extension Application - Voice Mail Table, and Automatic Record Member
Call Handling - Voice Mail Dialing Ratio
Extension – Record Allow

Operation – Setup

1. While connected to a CO Line, enter the code FEATURE 6 MNO 7 PQRS.
2. During recorder setup the display will show:

   RECORDER SETUP

3. When recording has begun the display shows:

   RECORDING

Operation – Cancel

While recording a conversation, enter the code FEATURE 6 MNO 7 PQRS. The recorder will return to idle and the conversation up to the time the code was entered (second time) will be recorded in this extensions voice mailbox. The display will return to the connected condition.

Conditions

a) You may program a Flexible Feature button for this feature code.
b) If you use a Flexible Feature Button for this feature…
   - During recorder set-up, the associated lamp for that button will light steady red.
   - When recording begins, the lamp will light steady green.
c) Outgoing call recording begins after the Call Duration Timer has expired.
d) Placing a call on hold constitutes completing a call and ends the recording function.

Default Setting

Extension – Record Allow = N (Range is Y/N.)

Programming Abstract

- Program the extension(s) that should be allowed to record calls for Record Allow.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are interactive LCD button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input **01-101~156-20** to program Record Allow for the selected extension **(101~156)**.
- Press [save]. The display will show the current setting for Record Allow for this extension.
- Press [chg] until the appropriate value displays.
- Press the Volume button (up or down) to return the index entry to program another extension **01-101~156-20** or...
- Exit the programming mode.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter. The program title page displays.
- Press any key at the program title page to enter the Main Menu.
- Select PC-DBA from the Main Menu. The PC-DBA menu is then shown.
- Select Programming from the PC-DBA menu.
- Use ↓ ↑ → ← to highlight "Extension" and then press Enter.
- Use ↓ ↑ → ← to highlight "Category 3" and then press Enter.
- Use ↓ ↑ → ← and Page Up Page Down to highlight Record Allow for the extension number.
- Press Enter to change the value of the database item (Y/N).
- Continue making changes as required.
- When all changes are made press Esc (escape) to exit this programming. You will be prompted to confirm exit request; press "**Y**" for yes.

- You will then be prompted to “Save Current Setting?”
  - Press “**N**” to abort changes and leave System Reminder unchanged.
  - Press “**Y**” to save changes.
- You will then be prompted “File Exists, Override?”
  - Press “**N**” to abort changes and leave System Reminder unchanged.
  - Press “**Y**” to save changes.
- Press Esc (escape) again to return to the “Database Programming” menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Voice Mail – Analog Integration

FEATURE 6 MNO 4 GHI

The DX-80 system may be interfaced to a third-party voice mail system via spare analog ports. Doing so occupies these ports and therefore reduces the number of system ports that can be used for the telephones, FAX machines, modems, etc.

Use of the DX-80 DX-SO voice mail system is highly recommended. The DX-80 DX-SO is a digital integration that does not occupy valuable port space of the DX-80 system. See Voice Mail – Digital Integration.

Using voice mail greatly enhances the use of the DX-80 system. Features accessible when voice mail is installed vary depending upon the third-party product connected. Features that the DX-80 system will accommodate include:

- Automated Attendant
- Extension unique voice mailboxes
- Call Forward to extension voice mailboxes
- Answering Machine Emulation
- UCD Queue Announcements
- Menu Routing
- Voice Record
- Automatic Voice Record
- Specific CO Line Greetings on Automated Attendant

Related Features

Auto Record
DISA
CO Line Ringing Modes
Messaging – Voice
Call Forward
Recorded Announcement Devices – via Voice Mail
Automated Attendant (usually part of the voice mail system)
Call Forward – CO Line Predefined
Call Forward – Extension Predefined
Universal Call Distribution Groups
Voice Call Recorder

Related Programming

Extension – Port Type
Extension – Record Allow, Predefined FWD
CO Line – Answering Position, Predefined FWD
Call handling – VM Dialing Ratio, VM Monitor Time, VM Reserve Port, DISA
Extension Application – Voice Mail Table
Extension Application – UCD Group

Operation – Calling into Your Voice Mailbox

1. While the telephone is idle, press the Voice Mail button .

   Or... FEATURE 6 MNO 4 GHI.

2. The display indicates the call status. When the voice mail connection is complete you will hear the prompt for your voice mailbox.
3. Use the voice mail user guide and audio prompts to retrieve messages and invoke other mailbox operations. (Send messages, update personal settings, etc.)
4. Hang-up to disconnect the call. (Your voice mailbox will be closed automatically by the DX-80 system (assuming programming has been properly completed.)

Operation – Transferring a Call to Any User's Voice Mailbox

1. While connected to a call, press the Voice Mail button .

   Or... Press the Transfer button and dial 4 GHI 3 DEF 3 DEF.

2. The display prompts you to enter the user's voice mailbox where this call should be routed. Input the user's voice mailbox (usually the same number as the extension). Then hang-up to complete the transfer.
3. The call is routed to the mailbox entered in a record mode so that the caller can leave a message for the mailbox user.

Operation – Retrieving Messages from Your Voice Mailbox

1. When messages are waiting in your voice mailbox, the display will indicate that messages are waiting and advise you of the number of new messages.
2. Press the center LCD Interactive button. (Or dial the voice mail code FEATURE 6 MNO 4 GHI.) A connection is established and your voice mailbox will prompt you.
3. Use the voice mail user guide and audio prompts to retrieve messages and invoke other mailbox operations.
4. Hang-up to complete the call. (The DX-80 system will close your voice mailbox.)

Conditions

a) When transferring a call to voice mail, you may choose to enter no mailbox number. Doing so, will route the caller to the voice mail main greeting (e.g., Auto Attendant greeting).
b) If no voice mail ports are available at the time you place your call into voice mail, you will hear ring-back tone until a port is available.
c) Voice mail feature operation is limited only by the ancillary voice mail system.
d) When voice mail ports are used heavily (high call traffic), messages indications will update notably slower than usual.
e) When VM messages are waiting, the Auxiliary Lamp will flash green.
f) The voice mail code FEATURE 6 MNO 4 GHI can be programmed on any available Flexible Feature Button.
g) When the voice mail code is programmed on a Feature Button, the associated LED will flash red when VM messages are waiting.
h) The voice mail UCD Group directory number (usually 4 GHI 3 DEF 3 DEF) can be programmed on any available Flexible Feature Button.

Programming Abstract

- Program those analog ports (extensions) as Port Type "VM."
- Program analog ports (1…8) connected to the ancillary voice mail system into one of the available UCD Groups, "Members" positions (UCD Group 24 is usually used for this purpose).
- Set the Voice Mail Table to reference the UCD Group to be used for the Voice Mail ports.

- Program the various Voice Mail call handling control digits into the voice mail table. (The DX-80 allows for specific control handling for various call types. For example, calls that recall to VM can be handled in a unique manner.)

Note: This programming must coincide with the programming of the ancillary voice mail device for the various functions to operate. Ancillary voice mail programming is outside the scope of this manual.

- Set the Voice Mail Dialing Ratio for suitable DTMF operation. (If required.)
- To activate Automated Attendant, set Answering Position to the UCD Group directory number coinciding with voice mail. (Usually "433" {UCD Group 24}.) See CO Line Ring Assignment.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input the code to go to the specific database item to change per the list:

01-101~156-21 (Extension "Port Type" where 101~156 is the analog port)

- Press [save]
- Press [chg] until the port type "VM" displays for this extension.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-01-01~24-03-01 (UCD Group "Members" where 01~24 is the group number.)

- Press [save]. This advances to Member #1 of the UCD Group selected.
- Press [chg].
- Input the extension directory of the analog port to program into this Member.
- Press [save].
- Press [next].
- Continue from [chg] above to program all Voice Mail ports as member of this UCD Group.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-01 (Voice Mail Hunt Group, where 1~3 is the Tenant Group {usually "1"})

- Press [save]. This advances to Voice Mail Table for Tenant 1 – Hunt Group.
- Press [chg] until the UCD Group to be used as the VM Hunt Group displays. (UCD Group where all of the VM type analog ports are programmed as Members.)
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-02-01 (VM Table – Prefix Table – ICM/VM, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the required digits to identify this call as originated at the subscriber phone.

- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-02-02 (VM Table – Prefix Table – Transfer, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the required digits to identify this call as transferred to this subscriber MB.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-02-02 (VM Table – Prefix Table – Busy FWD, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the required digits to identify this call as forwarded from this busy subscriber.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-02-02 (VM Table – Prefix Table – No Answer, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the required digits to identify this call as forwarded from this subscriber-no answer.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-02-02 (VM Table – Prefix Table – Direct, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the required digits to identify this call as immediately from this subscriber.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-02-02 (VM Table – Prefix Table – CO Greeting, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the required digits to identify this call to a specific CO Line.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-02-02 (VM Table – Prefix Table – CO Recall, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the required digits to identify this call as a specific CO Line recalling.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-02-02 (VM Table – Prefix Table – UCD Overflow, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the required digits to identify this call as a UCD Overflow Announcement.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-03 (VM Table – Suffix Digit, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the suffix digits if required to identify this call as the MB subscriber.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-03 (VM Table – Record Digit, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the digits required to active recording in this subscriber MB.
- Press [save].

- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-03 (VM Table – Delete Digit, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the digits required to delete the current recording in this subscriber MB.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-03 (VM Table – Disconnect Digit, where 1~3 = Tenant Group)

- Press [save].
- Press [chg].
- Input the digits required to force disconnect of the active port.
- Press [save].
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

03-33-01 (VM Dialing Ratio – Tone Time)

- Press [save]. This advances to Call Handling – VM Dialing Ratio – Tone Time.
- Press [chg] until the appropriate Tone Time displays.
- Press [next] to program Inter-Digit Time. Or…
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

03-33-01 (VM Dialing Ratio – Inter-Digit Time)

- Press [save]. This advances to Call Handling – VM Dialing Ratio – Inter-Digit Time.
- Press [chg] until the appropriate Inter-Digit Time displays.
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing “DX-80” at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program Extension Port Type:

- Use ↓↑→← to highlight "Extension." Then press Enter.
- Use ↓↑→← to highlight "Category 2." Then press Enter.
- Use ↓↑→← and Page Up Page Down to highlight "Port Type" for the analog extension connected to VM.
- Press Enter until Port Type "VM" displays.
- Use ↓↑→← and Page Up Page Down to highlight "Port Type" for the next analog extension to program.
- Press Enter until Port Type "VM" displays.
- Continue until all analog extensions connected to VM are programmed.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program UCD Group Members:

- Use ↓↑→← to highlight "Extension Application." Then press Enter.
- Use ↓↑→← to highlight "Uniform Call Distribution." Then press Enter.
- Input the UCD Group to program as the VM Hunt Group (usually 24). Then press Enter.
- Use ↓↑→← and Page Up Page Down to highlight "Members." Then press Enter.
- Use ↓↑→← and Page Up Page Down to highlight the member to program. Then press Enter.
- Input the extension number of the analog port to program as this member of the VM UCD Group. Then press Enter.
- Continue until all analog extensions connected to VM are programmed.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program Voice Mail Hunt Group and Call Handling digits:

- Use ↓↑→← to highlight "Extension Application." Then press Enter.
- Use ↓↑→← to highlight "Voice Mail Table." Then press Enter.

- Use ↓ ↑ → ← to highlight the Tenant Group to program (usually “1”). Then press Enter.
- Press Enter until the selected UCD Group number displays (usually 24).
- Use ↓ ↑ → ← to highlight the various call handling digit parameter to program. Then press Enter.
- Input the digit string for the selected call type. Then press Enter.
- Continue until all programming is complete.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program Voice Mail Dialing Ratio:

- Use ↓ ↑ → ← to highlight “Call Handling.” Then press Enter.
- Use ↓ ↑ → ← to highlight “Category 3.” Then press Enter.
- Use ↓ ↑ → ← to highlight VM Dialing Ratio – Tone Time or Inter-Digit Time. Then press Enter.
- Press Enter until the required time displays.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: “**Exit This Feature**”; press “**Y**” for yes.
- You will then be prompted to “**Save Current Setting**?”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” to save changes.
- If you press “**Y**” (yes), you will then be prompted “**File Exists, Override?**”
  - Press “**N**” to abort changes and leave all data unchanged.
  - Press “**Y**” (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a “SEND” function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Voice Mail – Digital Integration (optional)

FEATURE 6 MNO 4 GHI

The DX-80 system may be equipped with the optional DX-80 Voice – voice mail system. This voice processing solution is fully integrated with the DX-80 system. Performance of the digitally integrated DX-80 Voice is notably superior to that of a regular analog integration. When DX-80 Voice is added to the DX-80 system, the digital interface has the advantage of adding up to eight ports of voice mail while maintaining a maximum system configuration of 16 CO Line ports, 48 Digital Telephone ports, and 8 Analog device ports. With DX-80 Voice there is **no port loss**.

The DX-80 digital integration also eases installation effort by automating setup of the three primary functions users wish to deploy in a voice processing system; Voice Messaging, Automated Attendant, and Menu Routing. Just install

the DX-80 Voice and when the power is turned back on, the DX-80 system configures itself for the addition of the detected DX-80 Voice system.

Some of the capabilities that the DX-80 Voice adds are:

- Automated Attendant supported.
- Extension unique voice mailboxes (100 mailboxes in the basic package).
- Call Forward to extension voice mailboxes.
- All call handling conditions supported.
- Answering Machine Emulation supported.
- UCD Overflow Queue Announcements supported.
- Menu Routing supported.
- Voice Record supported.
- Automatic Voice Record supported.
- Specific CO Line Greetings on Automated Attendant supported.
- FAX Tone detect supported an all calls answered by the auto attendant.

Related Features

CO Line Ringing Modes
Auto Record
Call Forward – CO Line Predefined
Call Forward – Extension Predefined
Recorded Announcement Devices – via Voice Mail
Automated Attendant (usually part of the voice mail system)
Voice Call Recorder
DISA
Messaging – Voice
Call Forward
Universal Call Distribution Groups

Related Programming

Extension – Port Type
Extension – Record Allow, Predefined FWD
CO Line – Answering Position, Predefined FWD
Call handling – VM Dialing Ratio, VM Monitor Time, VM Reserve Port, DISA
Extension Application – Voice Mail Table
Extension Application – UCD Group

Operation – Calling into Your Voice Mailbox

1. While the telephone is idle, press the Voice Mail button .

   Or... Press FEATURE 6 MNO 4 GHI.

2. The display indicates the call status. When the voice mail connection is complete you will hear your voice mailbox name.
3. Use the voice mail user guide and audio prompts to retrieve messages and invoke other mailbox operations. (Send messages, update personal settings, etc.)
4. Hang-up to disconnect the call. (Your voice mailbox will be closed automatically by the DX-80 system (assuming programming has been properly completed.)

Operation – Transferring a Call to Any User's Voice Mailbox

1. While connected to a call, press the Voice Mail button .

   Or... Press the Transfer button and dial 4 GHI 3 DEF 3 DEF.

2. The display prompts you to enter the user's voice mailbox where this call should be routed. Input the user's voice mailbox (usually the same number as the extension). Then hang-up to complete the transfer.

3. The call is routed to the mailbox entered in a record mode so that the caller can leave a message for the mailbox user.

Operation – Retrieving Messages from Your Voice Mailbox

1. When messages are waiting in your voice mailbox, the display will indicate that messages are waiting and advise you of the number of new messages.
2. Press the center LCD Interactive button. (Or dial the voice mail code FEATURE 6 MNO 4 GHI.) A connection is established and your voice mailbox will prompt you.
3. Use the voice mail user guide and audio prompts to retrieve messages and invoke other mailbox operations.
4. Hang-up to complete the call. (The DX-80 system will close your voice mailbox.)

Conditions

a) When transferring a call to voice mail, you may choose to enter no mailbox number. Doing so, will route the caller to the voice mail main greeting (e.g., Auto Attendant greeting.)
b) If no voice mail channels are available at the time you place your call into voice mail, you will hear ring-back tone until a port is available.
c) Heavy voice channel use can impact message indication updates.
d) When VM messages are waiting, the Auxiliary Lamp will flash green.
e) The voice mail code FEATURE 6 MNO 4 GHI can be programmed on any available Flexible Feature Button.
f) When the voice mail code is programmed on a Feature Button, the associated LED will flash red when VM messages are waiting.
g) The voice mail UCD Group directory number (usually 4 GHI 3 DEF 3 DEF) can be programmed on any available Flexible Feature Button.

Programming Abstract

- Change the UCD Group used as the voice mail Group if necessary.
- Change the Voice Mail Table reference of UCD Group if necessary.
- To activate Automated Attendant, set Answering Position to the UCD Group directory number coinciding with voice mail. (Usually “433” {UCD Group 24}.) See CO Line Ring Assignment.

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password “# # # # # # # #.” (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.
- Input the code to go to the specific database item to change per the list:

06-01-01~24-03-01 (UCD Group “Members” where 01~24 is the group number.)

- Press [save]. This advances to Member #1 of the new UCD Group selected.
- Press [chg].
- Input the extension directory of the digital channel to program into this Member. (At default the digital channels of DX-80 Voice are 157, 158, 159, 160, 161, 162, 163, 164.)
- Press [save].
- Press [next].
- Continue from [chg] above to program all Voice Mail channels as members of this UCD Group.

- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

06-02-1~3-01 (Voice Mail Hunt Group, where 1~3 is the Tenant Group {usually "1"})

- Press [save]. This advances to Voice Mail Table for Tenant 1 – Hunt Group.
- Press [chg] until the UCD Group to be used as the VM Hunt Group displays. (New UCD Group selected and programmed with digital channel Members.)
- Press [next] to continue programming the various call handling digits (Prefix/Suffix).
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program UCD Group and Members:

- Use ↓ ↑ → ← to highlight "Extension Application." Then press Enter.
- Use ↓ ↑ → ← to highlight "Uniform Call Distribution." Then press Enter.
- Input the UCD Group to program as the VM Hunt Group (usually 24). Then press Enter.
- Use ↓ ↑ → ← and Page Up Page Down to highlight "Members." Then press Enter.
- Use ↓ ↑ → ← and Page Up Page Down to highlight the member to program. Then press Enter.
- Input the digital channel directory number as this member of the VM UCD Group. Then press Enter.
- Continue until all digital channels are programmed.
- When all changes are made press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program Voice Mail Hunt Group:

- Use ↓ ↑ → ← to highlight "Extension Application." Then press Enter.
- Use ↓ ↑ → ← to highlight "Voice Mail Table." Then press Enter.
- Use ↓ ↑ → ← to highlight the Tenant Group to program (usually "1"). Then press Enter.
- Press Enter until the selected UCD Group number displays (usually 24).

- All other database items in this programming screen are ignored when the DX-80 Voice is used.
- When changes are complete press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

Volume Control

The DX-80 digital speakerphone is equipped with a volume control that is used to adjust the various volume settings of the telephone. The following functions can be adjusted:

- Background Music
- Ringing
- Handset
- Speaker (Includes speakerphone and page announcement volume)
- Headset

Adjust for each function is made while that function is in use. The digital speakerphone remembers the volume level selected for each function the next time that function is used. The Ringer volume adjustment allows for 4 (four) volume levels. All other modes allow for 8 (eight) volume levels.

Related Features

Transfer	Paging
Background Music	Headset Mode
CO Line Ringing Assignment	Speakerphone

Operation

Whenever a mode is active, press the Volume button up or down as necessary. The volume for this mode/function is now set.

Conditions

a) You may adjust the ringing volume while the Digital Speakerphone is not in use or while it is ringing.
b) When adjusting the ring volume, the display will temporarily show the current setting.
c) When attempting to adjust the ringing volume beyond the highest or lowest setting, a single ring burst is heard to indicate that further adjustment is not possible.
d) Volume settings affects receive loudness only. The person to whom you are speaking will not detect an increase/decrease in volume.

Default Setting

At default the volume settings are as follows:

- Background Music = 4
- Ringing = 2
- Handset = 3
- Speaker (Includes speakerphone and page announcement volume) = 3
- Headset = 3

Warning Tone / CO Line Call Limiter

An extension can be limited to calls that are within a specific programmed time. The DX-80 can be set to warn an extension that the time has expired thereby advising the user to disconnect. In this mode, a system Warning Tone is heard repeatedly when the timer has expired. This feature is useful in a lobby or retail environment where lengthy calls are to be discouraged.

The Call Limiter can also be deployed with greater call control. In this mode, moments after the warning tone is heard the call is disconnected automatically by the system.

The CO Line Call Limiter can be set for extensions on a per extension basis and according to call type (outgoing or incoming or both).

Related Features

CO Line calling
Speed Dial
Last Number Redial
Auto Redial
Memo Pad
Saved Number Redial

Related Programming

Extension – Warning Tone
Extension – Drop Call In
Extension – Drop Call Out
Call Handling – Warning Time – Outgoing Call
Call Handling – Warning Time – Incoming Call

Conditions

a) This feature is not recommended as a “Toll Saver” option and should be used only for specific applications.
b) Additional calls can be made at the extension following the expiration of the Warning Tone/Drop Call operation.

Default Settings

Extension – Warning Tone = N (Range is Y/N.)
Extension – Drop Call In = N (Range is Y/N for each extension.)
Extension – Drop Call Out = N (Range is Y/N for each extension.)
Call Handling – Warning Time – Outgoing Call = 5 (Range is 1~30 minutes.)
Call Handling – Warning Time – Incoming Call = 5 (Range is 1~30 minutes.)

Programming Abstract

- Determine which extensions are to be limited and for what type of call (incoming or outgoing). Then program those extensions for the appropriate operation: Warning Tone only or Drop Call In/Out.
- Program the time period for the appropriate mode(s).

Programming via the DET (Digital Extension Terminal)

Note: [back], [next], [show], [chg], [bksp], and [save] are LCD interactive button operations. Use the three buttons below the LCD display to actuate the associated operation.

- Enter Database Administration using the feature code FEATURE # * TONE and then enter the DB Admin password "# # # # # # # #." (Note: This eight-character password can be changed.)
- Press [show]. The DB Item Select screen displays.

Program the extension for the appropriate mode

- Input **01-101~156-08** for Warning Tone (101~156 is the extension to program.)
- Input **01-101~156-09** for Drop Call Out (101~156 is the extension to program.)
- Input **01-101~156-10** for Drop Call In (101~156 is the extension to program.)
- Press [chg] until the appropriate value (Y/N) displays.
- Press [back] or [next] to select the previous/next DB Item or press the Volume button (up or down) to return to the DB Item Select screen or exit programming.

Program Warning Time

- Input **03-09-01** for Warning Time Outgoing
- Input **03-09-02** for Warning Time Incoming
- Press [chg] until the appropriate time displays
- Press the Hold button to return to the previous menu level or press the Volume button (up or down) to return to the DB Item Selection screen or exit programming.

Programming via PC-DBA

Note: PC-DBA is a DOS-based programming utility.

- Enter PC-DBA by typing "DX-80" at the DOS prompt in the PC-DBA working directory and then pressing Enter.
- Press any key at the program title page (as it requests) to enter the Main Menu.
- Select PC-DBA from the main menu.
- Select Programming from the PC-DBA menu. Then press Enter.

Program extensions for the appropriate Call Limiter

- Use ↓ ↑ → ← to highlight "Extension." Then press Enter.
- Use ↓ ↑ → ← to highlight "Category 2." Then press Enter.
- Use ↓ ↑ → ← and Page Up Page Down to highlight "Warning Tone" or "Drop Call Out" or "Drop Call In" for the extension to be changed.
- Press Enter until the appropriate value displays.
- Continue programming other extensions as required.
- When all changes are complete press the Esc (escape) key to exit this database programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.

- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.

Program Warning Time Incoming/Outgoing

- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight "Call Handling." Then press Enter.
- Use ↓↑→← to highlight Warning Time – Outgoing Call or Warning Time – Incoming Call. Then press Enter.
- Input the time for calls of this type.
- Press Enter.
- Continue making other programming changes as required.
- When all changes are made press the Esc (escape) key to exit this database-programming screen. You will see the prompt: "**Exit This Feature**"; press "**Y**" for yes.
- You will then be prompted to "**Save Current Setting**?"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" to save changes.
- If you press "**Y**" (yes), you will then be prompted "**File Exists, Override?**"
  - Press "**N**" to abort changes and leave all data unchanged.
  - Press "**Y**" (yes) to continue with the save operation.
- Press Esc (escape) again to return to the Database Programming menu.
- Continue making other programming changes or exit PC-DBA programming.

Note: Changes made via PC-DBA are not updated to the DX-80 system memory until a "SEND" function has been performed. Please refer to the Programming section of this manual to learn more about this procedure.

4. Maintenance and Trouble Shooting

User Maintenance

Maintaining the Comdial DX-80 digital telephone system is a combination of customer database changes, facilities and apparatus moves, adds and changes. These requirements are accomplished by practicing the techniques, illustrations and step-by-step instructions listed in the previous sections of this manual.

When installed properly the Comdial DX-80 performs relatively maintenance-free. From time to time the digital telephone instruments may become dirty or dusty and require cleaning. We suggest the use of a clean, dry cotton (or other soft, absorbent) cloth to wipe the instrument clean. Use of chemicals to clean the telephone plastics is NOT recommended since some chemicals can cause permanent damage to the telephone finish. If deep soiling conditions exist for the telephone to be cleaned, use of specialized telephony cleaning solutions may give satisfactory results. When trying any cleaner for the first time we suggest that it be applied to the telephone instrument underside in a small sample area to assure that the appropriate results are obtained before proceeding.

Technical Problem Solving

The System trouble shooting procedures are a logical approach to fault identification, analysis, and correction. The DX-80 may generate symptoms of problems that actually occur outside of the office environment. Problems such as system restarts (from temporary AC power interruption), fading (from the long distance carrier), or dropped calls (caused by internal users randomly pressing holding CO Line buttons) all are common situations that are not the result of a system component or software failure.

The System trouble shooting section attempts to provide the service technician with some quick, and reliable, tools to diagnose installation related or service related problem reports.

Symptom(s)	Diagnostic Aid	Cause(s)	Action
No system operation. No LED or LCD operation Digital Executive Telephones. No dial tone at IST's.	CPU Heartbeat LED Dark	No AC input	1. Check commercial AC outlet. 2. Verify that both ends of AC cord are plugged in.
		Power Switch	Switch the KSU AC power switch to the "ON" position.
		AC Fuse	Switch KSU power to the OFF position and remove cover (four screws). Locate the system power supply in the upper left corner of the KSU interior and inspect the AC fuse for continuity (DVM required).
		DC Fuse	Switch KSU power to the OFF position and remove cover (four screws). Locate the system power supply in the upper left corner of the KSU interior and inspect the DC fuse for continuity (DVM required).

Symptom(s)	Diagnostic Aid	Cause(s)	Action
No system operation. Digital Executive Telephones may have data frozen on the display. Erroneous LED operation.	CPU Heartbeat LED Dark or Lit steady.	Memory strap in "Cold Start" position.	If the Memory strap is in the "Cold Start" position, perform the Initialization and Power Up operation at the end of the Installation Section of this manual.
		Power Switch	Switch the KSU AC power switch to the “ON” position.
		AC Fuse	Switch KSU power to the OFF position and remove cover (four screws). Locate the system power supply in the upper left corner of the KSU interior and inspect the AC fuse for continuity (DVM required).
		DC Fuse	Switch KSU power to the OFF position and remove cover (four screws). Locate the system power supply in the upper left corner of the KSU interior and inspect the DC fuse for continuity (DVM required).
		SPI Buss Error	Switch KSU power to the OFF position and remove cover (four screws). Then check for the following: 1. Locate each expansion module and verify the ribbon cable connection is accurate and secure. 2. Check for improper aligning of module connectors. 3. Detach all station cabling and retest. 4. Check all socketed IC's for good "seated" connections. 5. Unplug one module at a time and retest until failed component is found. 6. Perform Initialization and Power Up sequence. **Note: this is an emergency action since the unique customer database will be erased and the system will reboot with default database programming.** 7. If this does not clear the trouble, replace KSU1 and follow the Power Up and Initialization procedure.

Symptom(s)	Diagnostic Aid	Cause(s)	Action
Telephone/Terminal apparatus dead	CPU Heartbeat LED flashing and 408M/408E/DPM 8 module Heartbeat flashing but one or more digital telephones are not functioning.	Shorted station cabling.	At the KSU, power the system down and remove the power cord from the AC outlet. Remove the KSU cover (four screws). Disconnect all station wiring on the affected 408M, 408E, or DPM8 and connect one known-good DET directly to one of the interface ports. Replace the KSU cover and retest with this phone. If this telephone works OK, follow the above procedures to test each interface port. If any port is found bad replace the module. If no port is found bad, replace the wiring/cabling.
		Bad telephone	If the above test yields all working ports and no cabling errors, test each connected telephone one at a time until the bad telephone is discovered. Replace the telephone.
Note:	Digital telephones use only one twisted cable pair for power, data control and voice communications. There are no fuses for station interface protection. Instead, a current sensing Polly-switch limits excessive current going to each terminal connection. If a station cable pair is shorted or a telephone's DC power supply is damaged, the Polly-switch will temporarily open to protect the KSU Module circuitry.		

Symptom(s)	Diagnostic Aid	Cause(s)	Action
Digital telephone erratic operation: - Erratic LED/LCD operation - Faint data noise in the background during conversations	Digital Volt/Ohm Meter	Cable distance is too long for gauge of wire/cable used.	If a digital telephone is not receiving clear 2B+D signaling from the KSU, test as follows: 1. With station cable cross-connect (jumper) wire removed and telephone unplugged, place a short circuit across the inside wiring cable pair at the user end (jack) of the cable. 2. With a DVM, measure the short circuit resistance one way. The short-circuited cable pair ohm reading should not exceed ____ ohms.
		Non-standard telephone cable being used.	Each digital telephone should operate on one dedicated, unshielded, twisted pair cable to avoid data noise and interference between adjacent cable pairs.
		Multiple digital extensions being fed from one common cable or on the same cable pair.	

Symptom(s)	Diagnostic Aid	Cause(s)	Action
Other party cannot hear you. (Handset)	Another digital telephone	Component failure	Lift handset, dial another digital extension. Confirm connection of audio. Audio one way only…
			Replace handset and repeat. If problem persists…
			Replace handset cord and repeat test. If the problem persists…
			Replace the telephone instrument.

Symptom(s)	Diagnostic Aid	Cause(s)	Action
Cannot hear other connected party	Another digital telephone	Component failure	Lift handset, intercom dial tone should be heard over the handset. If not...
			Hang up (put the handset in the cradle), then press the ON/OFF button. If dial tone is heard over the loudspeaker...
			...Replace handset and repeat the first test. If there is still no dial tone heard through the handset...
			...Replace the handset cord and retest. Still no dial tone heard... replace the telephone.
			If dial tone is not heard over the loudspeaker (ON/OFF button test)... replace the telephone.
Note:	**The above test requires that the feature "Auto Select" be set for intercom operation ("ICM").**		

Symptom(s)	Diagnostic Aid	Cause(s)	Action
Other party can't hear you while using the speakerphone.	Another digital telephone	Connection / component failure	Press the ON/OFF button and listen for dial tone over the loudspeaker. Call a known good extension. (The called extension should use the handset for this test.) Verify two-way connection. If the called extension cannot hear your voice... verify that MUTE is not enabled (Status Lamp flashing red). Lift the handset and verify two-way connection using handset. If verified as a speakerphone problem... replace the telephone.

Symptom(s)	Diagnostic Aid	Cause(s)	Action
No sound heard over loudspeaker in speakerphone mode.	Another digital telephone	Connection / component failure	Press the ON/OFF button and listen for dial tone over the loudspeaker. Call a known good extension. (The called extension should use the handset for this test.) Verify two-way connection. If you cannot hear the called extension ... verify that MUTE is not enabled at the called extension (Status Lamp flashing red). Lift the handset and verify two-way connection using handset. If verified as a speakerphone problem... replace the telephone.

Symptom(s)	Diagnostic Aid	Cause(s)	Action
Static and / or noise can be heard during a conversation.	Process of elimination. Industry standard technician testing tools (lineman's test set, etc.)	Another extension	While on intercom call is the static heard only when connected to one particular extension? … Examine that extension.
		Station cabling/MDF wiring	If static exists on all calls, check station cabling/wiring and all MDF connections ...correct any problems.
		Extension apparatus	If noise persists, change-out swappable components (handset, handset cord). If noise continues try a known good extension connected to this station cable.
		Telco problem	If static/noise is heard on CO lines only, determine if other extensions also hear the noise/static. If so, are several CO lines affected or only a few. Disconnect CO line at interface point and connect Lineman's test set to the same point of connection *ahead* of the system. If noise/static persists... contact the local servicing telephone company and request repair. If noise/static can be isolated to the DX-80 equipment, verify which CO line ports are affected (which CO ports seem to have noise/static). ...replace interface modules as required.

Symptom(s)	Diagnostic Aid	Cause(s)	Action
Programming lost or changed.	Digital Executive Telephone display.	Intended programming change.	Check with system administrator for incidental changes made.
		PC-DBA programming changes Send All operation.	When using PC-DBA to make customer database changes the user must take special precaution not to overwrite existing data with residual PC-DBA working directory values. When using PC-DBA to update any database, it is highly recommended to perform the function Receive All prior to making any specific database changes to assure that the working directory database matches the database in use at the customer site.
		Bad Memory battery	If power fluctuations occur and the Memory Battery Backup battery is low or bad, the customer database is susceptible to being defaulted (factory settings loaded) whenever a power interruption occurs. If this occurs change the standard (photo-cell type) lithium battery.

Maintenance Utilities

The DX-80 includes a versatile Maintenance Utility that is accessed through PC-DBA. A technician with PC skills can easily use the Maintenance function to obtain various data and information about the DX-80 and all connected components.

The DX-80 system allows the installer/technician to administer system database parameters via an IBM® Compatible, Personal Computer. The use of a PC has distinct advantages over programming the system via the digital telephone, including: specific database archiving (via save function), remote programming, outboard programming (program the system template into the PC memory then send it to the DX-80 when ready). The PC program that interfaces with the DX-80 system is PC-DBA (PC-Database Administration).

PC-DBA requires the following resources in the PC environment:

- PC running DOS (PC-DBA can be run in a DOS Window but performance can be impacted by other Windows® modules. We do not warranty or guarantee any level of performance in the Windows environment.)
- 640k minimum RAM
- 386 minimum microprocessor
- 2 megabytes minimum space on the hard disk

Important Notice: PC-DBA is available via the *Comdial* web page at www.comdial.com. This software is not available by any other means. Use of this DX-80 utility requires a well-rounded understanding of the PC environment and the DOS file structure. The manufacturer and/or supplier of PC-DBA cannot support users who are unfamiliar with these basic requirements. If any of these issues concern you, please consult with a qualified technician who is well-versed in PC operation.

Loading PC-DBA software:

When PC-DBA is retrieved from the hosted Web site it is downloaded in an archived format to expedite the download process. It is recommended that you take the following actions when deploying PC-DBA:

1. Create a directory on the PC where PC-DBA can be loaded. (Typically “DX80”.) (This becomes known as the “working directory”.)
2. Copy the archive file into that directory and then executive the un-archive process. Type the file name at the DOS prompt and watch all of the contained files copy into the *working directory*.

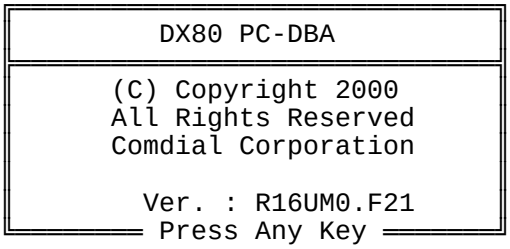
Whenever PC-DBA is to be used, start the computer and open the PC-DBA directory. To start PC-DBA:

At the DOS prompt type: [**DX80**] (excluding the “[]” brackets.) Then press Enter.

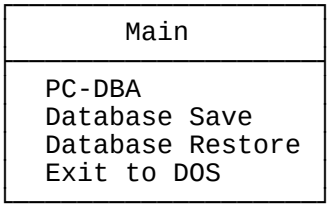
Entering into PC-DBA Maintenance:

Note: PC-DBA is a DOS-based programming utility.

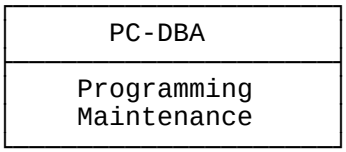
- Enter PC-DBA by typing “DX80” at the DOS prompt in the PC-DBA working directory then pressing Enter. At this time the title page is displayed as below:



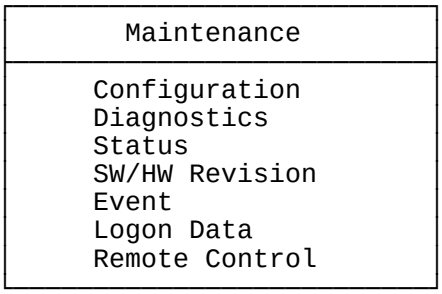
- Press any key (as requested). The Main screen is then displayed with the cursor positioned on “PC-DBA”.



- Enter into the Programming and Maintenance functions of PC-DBA by pressing Enter. The PC-DBA screen is now shown with the cursor positioned on “Programming.”



- Use ↓ ↑ → ← to select Maintenance and then press Enter to enter into the Maintenance screen. The Maintenance screen is shown with the cursor positioned on “Configuration”.



All operations in PC-DBA – Maintenance require a data communications connection with the DX-80 system to be interrogated. This can be done in two ways; via direct connection to the KSU1 – CPM – PC-DBA port or via the optional system modem (PN 7249). Once a data communications link has been established, F5-Cnt (Connect) is possible. This *connect* operation links PC-DBA to the DX-80 processor for data exchange.

Cable

Connection to the DX-80 system on site is accomplished via the PC serial port (COM Port). Use a **straight-through, 9-pin to 9-pin, Male/Female** cable from the PC serial port to the DX-80 CPM – PC-DBA Port. Once this connection is made, it is possible to connect to the DX-80 system processor for the various Maintenance operations.

Modem

See F9-Modem below. This connection method can be used while off-site.

PC-DBA Control Menu

At the bottom of the PC-DBA screen, special control functions of PC-DBA are shown. The following line/bar can be found at the bottom of the display:

```
F1-Help F2-Unsave F3-RCV F4-SND F5-Cnt F6-Disc F7-Prn F8-Init F9-Mdm F10-
                                                              RS232C
```

Use the associated “F” (Function) keys on the PC keyboard to access the various operations. The functions and their specific operation are detailed in the text below.

F1 – Help

Press F1 to view the keystroke help menu of PC-DBA. There are two help screens.

F2 – A-Save/U-Save

This is a function of PC-DBA – Programming only and is described in Database Administration – Via PC-DBA.

F3 – Receive

This is a function of PC-DBA – Programming only and is described in Database Administration – Via PC-DBA.

F4 – Send

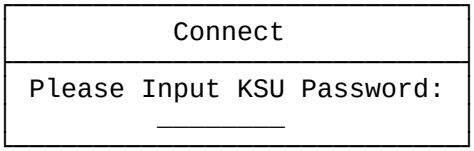
This is a function of PC-DBA – Programming only and is described in Database Administration – Via PC-DBA.

F5 – Connect

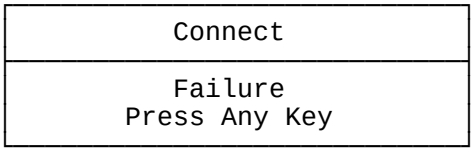
Connecting to the DX-80 processor

Once a physical connection (cable or modem) has been made between the PC and the DX-80 system. You must link the two devices using the F5-Connect function.

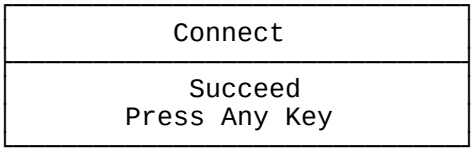
Press F5. If an adequate connection (straight-through serial cable or modem connection) exists between the DX-80 system and the PC you will see the following Connect prompt:



Input the Database Administration Password. (At default this password is "_ _ _ _ _ _ _ _" (8 spaces). Press the space bar eight times. When all eight password characters are input correctly, the connection process will begin. If unsuccessful (wrong password or poor connection), the following error screen will appear:



If successful, confirmation is given via the following screen:



Press any key to return to the PC-DBA Maintenance screens.

When a successful connection has been established between the DX-80 processor and the PC PC-DBA software the following icon is displayed in the upper left corner of the PC-DBA screen.

[Cnt]

F6 – Disconnect

Disconnecting from the DX-80 processor

When a link is established between the DX-80 and PC-DBA, this link must also be broken when Maintenance operations are complete. This breakdown of the connection will occur automatically if the connection path (cable or modem connection) is interrupted or when PC-DBA is exited while the link is active.

To force disconnect between the DX-80 processor and PC-DBA, press F6-Disconnect. This procedure usually completes within a few seconds.

F7 – Print

At times a screen printout is desirable. This utility allows printing of each PC-DBA screen. Printout requires that this screen be in use at the time F7 is pressed. F7-Print also requires that a printer be connected to the PC Parallel port to operate. (Some other, third-party utility programs are available to capture the output of the PC LPT (parallel) port to a file. These utilities can be very helpful for severe trouble shooting analysis.)

F8 – Initialize

This is a function of PC-DBA – Programming only and is described in Database Administration – Via PC-DBA.

F9 – Modem

Remote connection to the DX-80 system is possible via modem. The optional modem may be purchased allowing remote administration of the DX-80 system database and Maintenance operations. The default directory number of the modem is 199. Some working knowledge of modem operation and connection is useful.

To establish a modem connection

Make sure that the attendant at the site location is aware that a modem connection will be taking place. (Use of the automated attendant can greatly assist the modem connection process by removing the human element at the site location.)

Press F9-Mdm. The following modem control screen is shown:

```
┌──────────────────────────────────────┐
│                MODEM                 │
├──────────────────────────────────────┤
│              Connect                 │
│              Disconnect              │
└──────────────────────────────────────┘
```

Use ↓ ↑ → ← to select Connect, then press Enter. The following modem control string is displayed:

```
┌──────────────────────────────────────┐
│           MODEM Connect              │
├──────────────────────────────────────┤
│ Input MODEM control string :         │
│ ATX1E0Q0V0.........................  │
└──────────────────────────────────────┘
```

If your modem requires some different control string, input that string now. Then press Enter.

If nothing happens, it is likely that the modem is not being addressed by PC-DBA. Use F10-RS232C to select the COM (serial port) that is connected to the PC modem. Then repeat these steps from F9-Mdm above.

```
┌──────────────────────────────────────┐
│           MODEM Connect              │
├──────────────────────────────────────┤
│         Input dial number:           │
│ ...................................  │
└──────────────────────────────────────┘
```

Input the telephone number to dial (at the site location). Then press Enter.

```
┌──────────────────────────────────────┐
│           MODEM Connect              │
├──────────────────────────────────────┤
│                                      │
│              waiting                 │
└──────────────────────────────────────┘
```

NOTE: If modem connection at this site requires a human to transfer the modem call to the DX-80 modem (Extension 199), you must have a standard telephone connected to the same circuit as the modem so that you may verbally request the answering person to transfer the call.

Dialing begins and then the modems negotiate connection. A successful negotiation results in the following confirmation display:

```
┌──────────────────────────────────────┐
│           MODEM Connect              │
├──────────────────────────────────────┤
│                                      │
│           Connect Succeed            │
└──────────────────────────────────────┘
```

The connection is also noted with an icon that appears in the upper left corner of the display: `[Mdm].`

Once a modem connection has been accomplished, F5-Connect is possible. F5-Connect is required to link PC-DBA to the DX-80 CPM processor.

F10 – RS232C

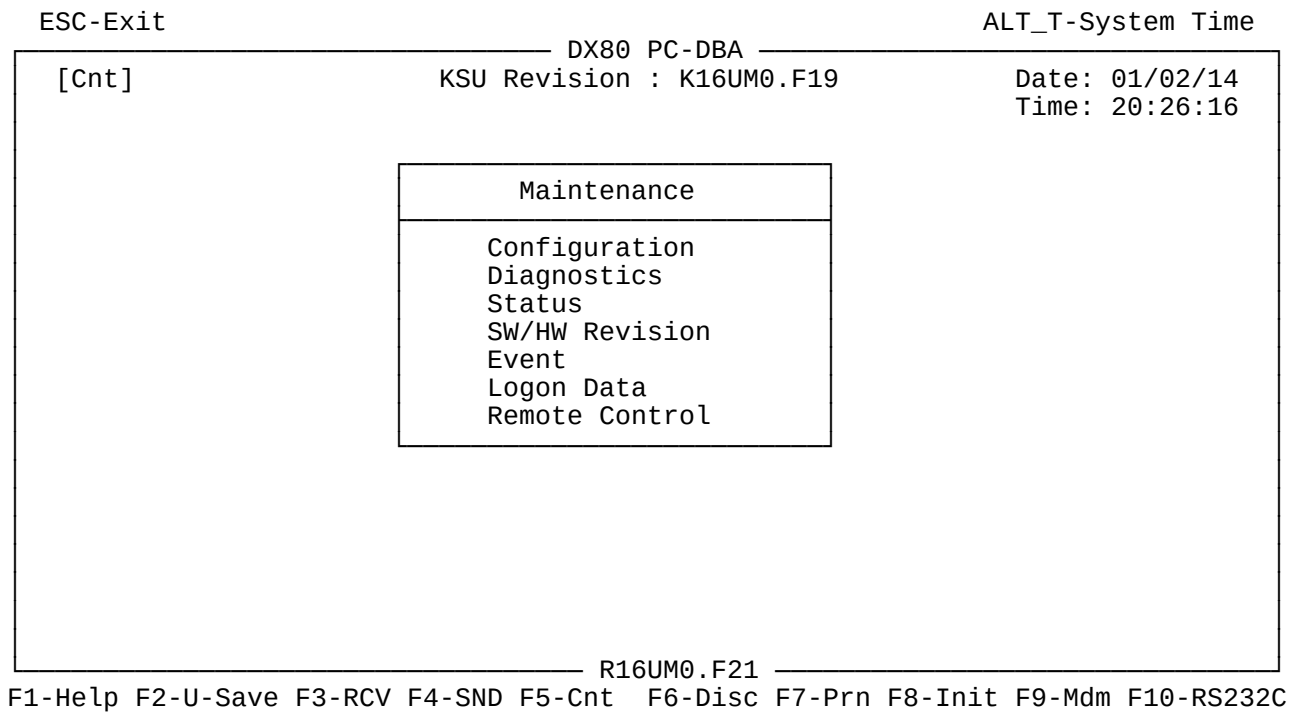
F10-RS232C is the utility to setup the PC COM port. To successfully setup the PC COM port you must know how the PC hardware is configured. In this utility you must select the COM Port number (PC-DBA supports COM 1 or 2 only) and the baud rate that will be used for the connection. At default PC-DBA is setup to use COM Port 1 at 9600 bps. (9600 bps matches the default baud rate set for the DX-80 CPM – PC-DBA Port.)

While using a modem connection, it is best to set the COM port baud rate at 2400 bps since this is the speed of the DX-80 Optional Modem. (Setting this speed can expedite the modem negotiation process since compression link choices will not be attempted.)

Maintenance Utilities

Once the F5-Cnt operation is successfully completed and a link between the PC-DBA and DX-80 processors is established, the Maintenance Utilities can be used. (If this is not established, refer to the text above and connect the two devices.)

The PC-DBA Maintenance screen appears as follows. Notice that successful connection to the DX-80 system processor CPM is indicated by the "[Cnt]" in upper left corner.



Also, for reference and diagnosis, the current software version of the connected DX-80 system and PC-DBA are displayed. Notice "KSU Revision : K16UM0.F19"in the upper part of the screen and "R16UM0.F21" in the lower part of the screen. KSU Revision is the DX-80 software and "R16UMx.xxx" is the PC-DBA version.

- Use ↓ ↑ → ← to select the appropriate Maintenance utility and then press Enter. Each utility is described below.

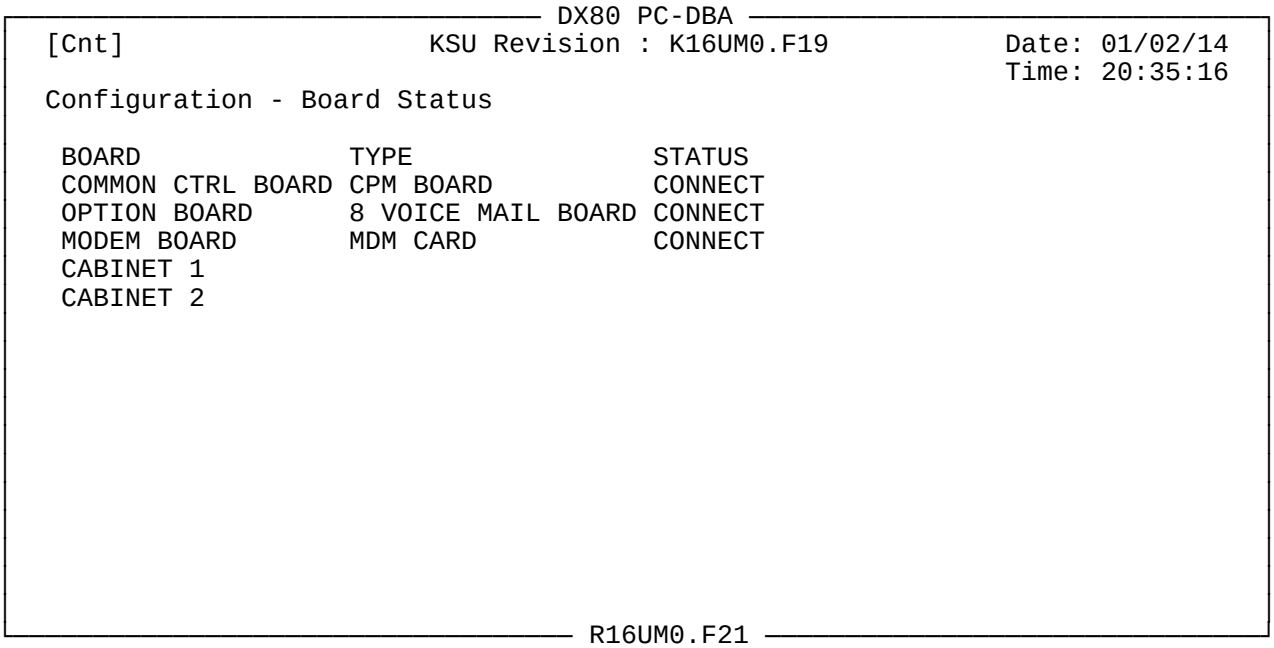
Configuration

When "Configuration" is selected, the DX-80 processor sends the current hardware configuration to PC-DBA for viewing. For each Board viewed the Type is displayed so that the hardware can be readily identified. The Option Board can show three Board Types:

Option Board Type	Description
AAM	Automated Attendant Module
FL-VM	Flash Voice Mail (with Automated Attendant)
PC-8	8-Port Hard Drive Voice Mail (with Automated Attendant)

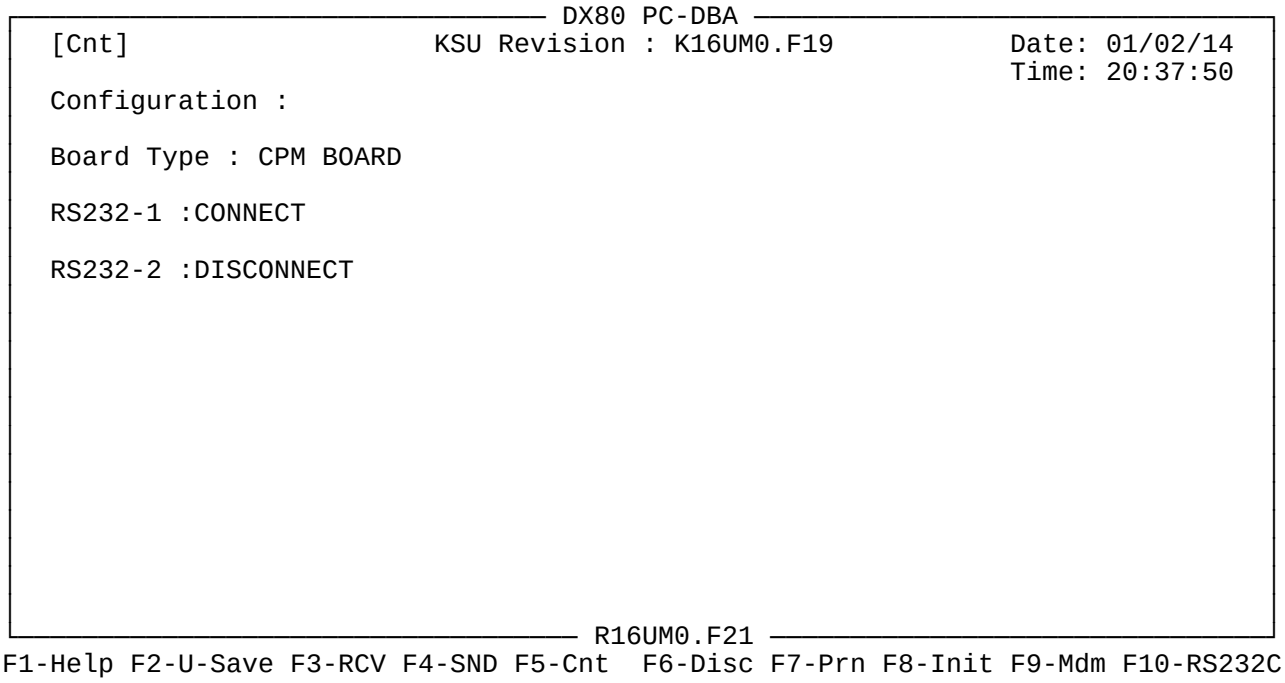
Board Status can be any of the following:

Board Status	Description
Fail/Failed	This board is reporting some failure as a result of the last diagnostic test. Also, this can indicate that CO lines are not connected to a CO port or that Loop Current is no longer present on the CO lines connected.
Open	The board position is Open (not occupied, and likely never occupied).
Connect	This board is reporting connected (installed and normal) status
Disconnect	This board has been installed and is now removed.
Block/Unblocked	This board/port is Blocked/Unblocked as part of a Maintenance service function.



To view a board (installed PCB) in detail, use ↓ ↑ → ← to select the Board and then press Enter.

The following display shows the detail of the CPM Board:



To view a Cabinet 1 or 2 board, use ↓ ↑ → ← to select the appropriate Cabinet and then press Enter.

The following is a display of Cabinet 1:

```
                                    DX80 PC-DBA
 [Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                             Time: 20:38:54
 Configuration - Board Status          Cabinet 1

  BOARD             TYPE             STATUS
  BOARD  1          408 BOARD        CONNECT
  BOARD  2          OPEN             OPEN
  BOARD  3          OPEN             OPEN
  BOARD  4          APM4             CONNECT
  BOARD  5          COM4             CONNECT

                                    R16UM0.F21
```

To view a board in this Cabinet in detail, use ↓↑→← to select the appropriate Board and then press Enter.

The following display shows the 408 Board of Cabinet 1:

```
                                    DX80 PC-DBA
 [Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                             Time: 20:40:03
 Configuration :
 Board Type : 408 BOARD                Cabinet 1

 TRK POS         TYPE             STATUS
 1/01/01         CO               CONNECT
 1/01/02         CO               FAIL
 1/01/03         CO               FAIL
 1/01/04         CO               FAIL

 EXT POS         TYPE             STATUS
 1/01/01         EXEC. DISPLAY    CONNECT
 1/01/02         NO CONNECTION    OPEN
 1/01/03         NO CONNECTION    OPEN
 1/01/04         NO CONNECTION    OPEN
 1/01/05         NO CONNECTION    OPEN
 1/01/06         NO CONNECTION    OPEN
 1/01/07         NO CONNECTION    OPEN
 1/01/08         NO CONNECTION    OPEN

                                    R16UM0.F21
F1-Help F2-U-Save F3-RCV F4-SND F5-Cnt  F6-Disc F7-Prn F8-Init F9-Mdm F10-RS232C
```

The following display shows the COM4 Board of Cabinet 1:

```
                                    DX80 PC-DBA
[Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                            Time: 20:41:18
Configuration :
Board Type : COM4 BOARD              Cabinet 1

TRK POS         TYPE            STATUS
1/05/01         CO              OPEN
1/05/02         CO              OPEN
1/05/03         CO              OPEN
1/05/04         CO              OPEN

                                    R16UM0.F21
```

The following is a display of Cabinet 2:

```
                                    DX80 PC-DBA
[Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                            Time: 20:42:16
Configuration - Board Status         Cabinet 2

 BOARD              TYPE            STATUS
 BOARD  1           OPEN            OPEN
 BOARD  2           OPEN            OPEN
 BOARD  3           OPEN            OPEN
 BOARD  4           OPEN            OPEN
 BOARD  5           OPEN            OPEN

                                    R16UM0.F21
```

Diagnostics

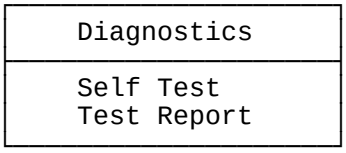
The Diagnostics function can be invoked to force a diagnostic test operation. The system performs this test automatically at the time it boots up (initial installation) and whenever programmed to do so. (See Database Administration – via PC-DBA – System Application – Category 1 – Self-Test Time.) At default (factory settings), the system Self-Test Time is set to “NULL” (never performed).

The Diagnostic Self-Test can be invoked Automatically (as above) or Manually.

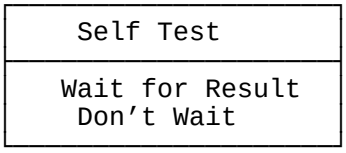
When the Diagnostic Self-Test is invoked, the DX-80 will perform a list of software and hardware checks to assure proper operation of the hardware installed.

Diagnostic Test activity has the lowest priority in CPU processing tasks. Therefore the time required to complete this testing operation could vary from one test to the next. When an automatic test or manual test of the entire system is invoked, the testing time will be approximately 30 minutes.

Manual Diagnostics testing can be invoked for the entire system or for one module or module port.



When the Diagnostic option “Self Test” is selected, you are prompted to Wait For the Result or Don’t Wait.



When invoking the test for the entire system, it is recommended not to wait for the result since this will take several minutes and force PC-DBA to wait for the diagnostic report. (While waiting, it is not possible to perform any other PC-DBA functions.)

When the Test Report option is selected, the DX-80 will deliver the last Diagnostics test report to PC-DBA.

Screens and notes of the information included in this report are shown on the following pages:

```
                                  DX80 PC-DBA
 [Cnt]                  KSU Revision : K16UM0.F19          Date: 01/02/14
                                                           Time: 20:43:58
 Diagnostics :

 BOARD              TYPE               RESULT
 COMMON CTRL BOARD  CPM BOARD          PASSED
 OPTION  BOARD      8 VOICE MAIL BOARD CONNECT
 MODEM   BOARD      MDM BOARD          TESTING
 Cabinet 1
 Cabinet 2
                                  R16UM0.F21
```

Notes:
This is an overview screen of test results.

- At the time this report was taken the Modem Module (MDM) was in the testing state.
- Notice that the PC-8 Module reports “CONNECT.” Since the PC-8 is its own self-contained system that runs independently of the DX-80 processor, “CONNECT” and “DISCONNECT” are the only conditions reported for this module.
- Move the cursor to any board/Cabinet and press Enter to get details of that board.

```
                                  DX80 PC-DBA
 [Cnt]                  KSU Revision : K16UM0.F19          Date: 01/02/14
                                                           Time: 20:44:35
Diagnostics -  CPM BOARD :         PASSED

 RS232-1 :PASSED

 RS232-2 :PASSED

 ROM CHECK : PASSED

 RAM CHECK : PASSED

                                  R16UM0.F21
```

Note:
Detail of CPM Board

```
──────────────────────────────── DX80 PC-DBA ────────────────────────────────
 [Cnt]                   KSU Revision : K16UM0.F19          Date: 01/02/14
                                                            Time: 20:45:23
Diagnostics -  Cabinet 1

  BOARD              TYPE
  BOARD  1           408 BOARD
  BOARD  2           OPEN
  BOARD  3           OPEN
  BOARD  4           APM4
  BOARD  5           COM4

──────────────────────────────── R16UM0.F21 ─────────────────────────────────
F1-Help F2-U-Save F3-RCV F4-SND F5-Cnt  F6-Disc F7-Prn F8-Init F9-Mdm F10-RS232C
```

Note:
- Cabinet 1 selected.
- Move the cursor to any board and press Enter to get details of that board.

408 Board Selected

- Passed = Loop Current detected.
- Busy
- Failed = No Loop Current

CO Lines:
- Ports 1/01/1~1/01/4
- Directory numbers 740~743

- Passed = Loop OK
- In = Incoming call
- Out = Outgoing call
- Failed = Loop Fail

```
──────────────────────────────── DX80 PC-D
]                       KSU Revision : K1                    Da
                                                             Ti
ostics -  408 BOARD :

  COL POS   DIR#    LOOP              DISC
  1/01/1    740     PASSED            PASSED
  1/01/2    741     BUSY              IN
  1/01/3    742     BUSY              OUT
  1/01/4    743     FAILED            FAILED

  POS   DIR#        TYPE              RESULT
  1/1   101         EXEC. DISPLAY     PASSED
  1/2   102         EXEC. DISPLAY     FAILED
  1/3   103         NO CONNECTION     OPEN
  1/4   104         EXEC. DISPLAY     OPEN
1/01/5  105         NO CONNECTION     OPEN
1/01/6  106         NO CONNECTION     OPEN
1/01/7  107         NO CONNECTION     OPEN
1/01/8  108         NO CONNECTION     OPEN

──────────────────────────────── R16UM0.F21 ─────────────────────────────────
```

- Digital Executive Telephone
- No Connection = no device attached.

Extensions
- Ports 1/01/1~1/01/8
- Directory numbers 101~108

- Passed = operation OK.
- Failed = data communications error to device.
- Open = either no connection ever registered or previous registered device is no longer connected.

COM4 / Board 5 Selected

```
DX80 PC-DBA
 [Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                             Time: 20:46:53
Diagnostics -  COM4 BOARD :

 COL POS   DIR#    LOOP                DISC
 1/05/1    744     OPEN                OPEN
 1/05/2    745     OPEN                OPEN
 1/05/3    746     OPEN                OPEN
 1/05/4    747     OPEN                OPEN

                                                  • Passed = Loop OK
                                                  • In = Incoming call
                                                  • Out = Outgoing call
                                                  • Failed = Loop Fail
                                                  • Open = Not Equipped

R16UM0.F21
```

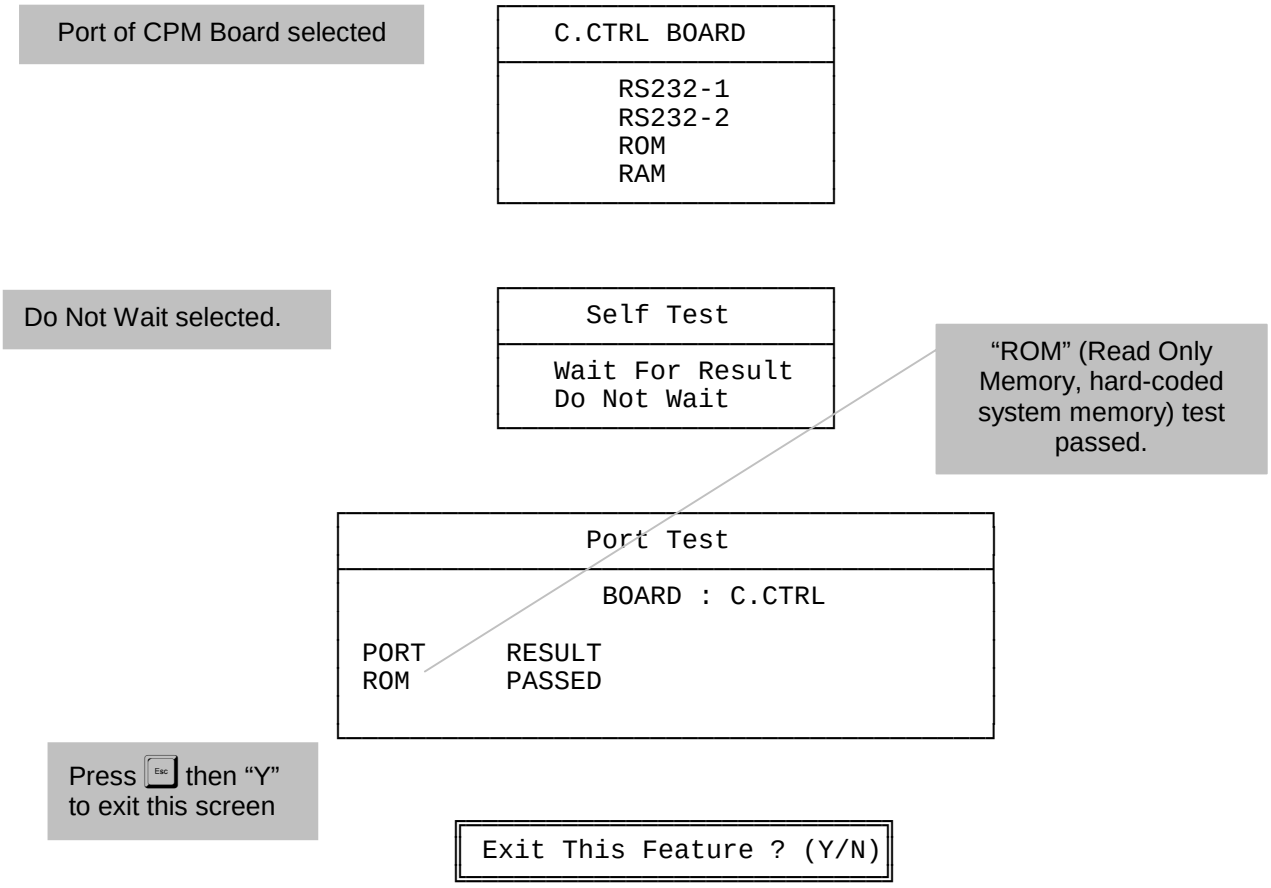
Press Esc then "Y" to exit this screen

```
Exit This Feature ? (Y/N)
```

```
    Self Test
-------------------
      System
      Board
      Port
```

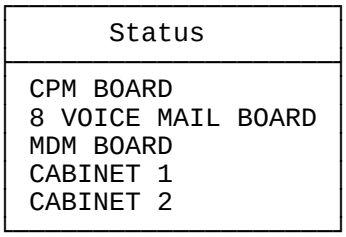
Invoke another test by selecting from the list.

```
CPM BOARD
8 VOICE MAIL BOARD
MDM BOARD
CABINET 1
CABINET 2
```



Status

The Status function can be invoked to view specific DX-80 system resource status. Move the cursor to the system resource to view and press Enter.



```
                                DX80 PC-DBA
[Cnt]                  KSU Revision : K16UM0.F19          Date: 01/02/14
                                                          Time: 20:52:26
Status - CPM BOARD :

RS232-1 :BUSY


RS232-2 :IDLE

                                R16UM0.F21
```

Select the appropriate system resource/device and press Enter.

Press Esc then "Y" to exit this screen and select another.

```
                                DX80 PC-DBA
[Cnt]                  KSU Revision : K16UM0.F19          Date: 01/02/14
                                                          Time: 20:52:57
Status - OPTION BOARD :


8 VOICE MAIL BOARD  : CONNECT
    Voice Mail 1    : IDLE
    Voice Mail 2    : IDLE
    Voice Mail 3    : IDLE
    Voice Mail 4    : IDLE
    Voice Mail 5    : IDLE
    Voice Mail 6    : IDLE
    Voice Mail 7    : IDLE
    Voice Mail 8    : IDLE

                                R16UM0.F21
```

- Idle = Ready for a call
- Busy = Port in use

```
DX80 PC-DBA
[Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                            Time: 20:53:22
Status - MDM BOARD :


BUILT-IN MODEM : IDLE

R16UM0.F21
```

- Idle = Ready for a call
- Busy = Port in use

```
408 BOARD
OPEN
OPEN
APM4 BOARD
COM4 BOARD
```

```
DX80 PC-DBA
[Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                            Time: 20:54:21
Status - 408 BOARD :
TRK POS   DIR#    STATUS
1/01/1    740     IDLE
1/01/2    741     FAIL
1/01/3    742     FAIL
1/01/4    743     FAIL

EXT POS   DIR#       TYPE              STATUS
1/01/1    101        EXEC. DISPLAY     IDLE
1/01/2    102        NO CONNECTION     OPEN
1/01/3    103        NO CONNECTION     OPEN
1/01/4    104        NO CONNECTION     OPEN
1/01/5    105        NO CONNECTION     OPEN
1/01/6    106        NO CONNECTION     OPEN
1/01/7    107        NO CONNECTION     OPEN
1/01/8    108        NO CONNECTION     OPEN

R16UM0.F21
```

Status can be:

- Idle = equipped and ready
- Fail = equipped but errors present. (CO – no loop current. Ext. lost data communications)
- Open = no hardware recognized
- Busy = in use

SW/HW Revision

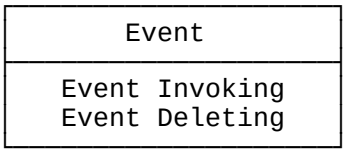
SW/HW Revision can be invoked to view the current version of software installed in the DX-80. The Hardware Revision (HW Revision) is a label only field that allows the user of PC-DBA to record the revision of hardware installed at the site. This information is stored in the Database Save operation of PC-DBA.

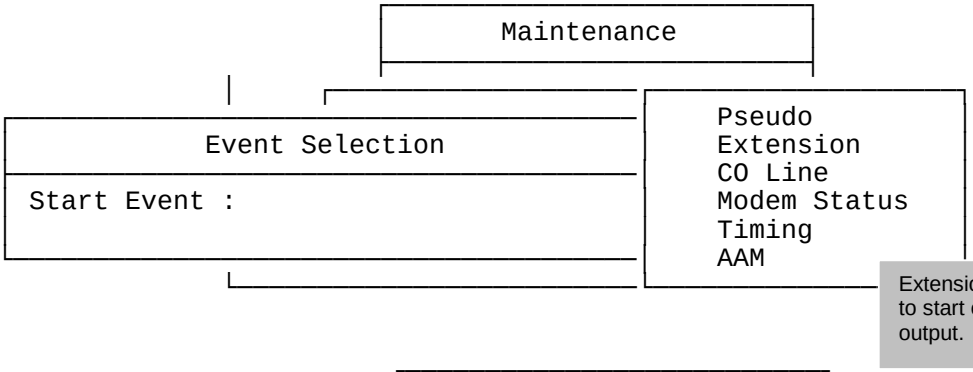
```
DX80 PC-DBA
[Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                            Time: 20:55:05
Maintenance - SW/HW Revision :

 BOARD              POS       SW Revision     HW Revision
 CPM BOARD                    K16UM0.F19      NULL
 8VM CARD                     POMVM0.F01      NULL
 MDM CARD                     NULL            NULL
 DPM BOARD          1/01      PEDUM0.F09      NULL
 OPEN               1/02      NULL            NULL
 OPEN               1/03      NULL            NULL
 APM4 BOARD         1/04      PEAUM0.F09      NULL
 OPEN               2/01      NULL            NULL
 OPEN               2/02      NULL            NULL
 OPEN               2/03      NULL            NULL
 OPEN               2/04      NULL            NULL
 COM BOARD          1/1&5     PTLUM0.F09      NULL
 OPEN               2/1&5     NULL            NULL

R16UM0.F21
```

Event

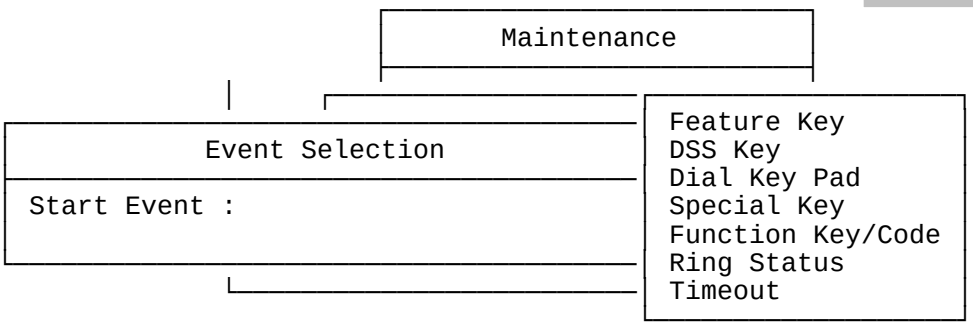
The Event tracking operation can be invoked to record system actions processed for the purposes of debugging the system. This operation is rarely required and usually invoked following a request by the customer service department to do so.

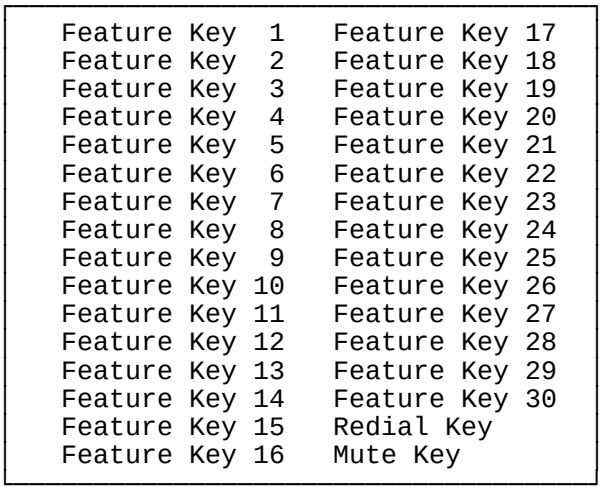
Event tracking can be started by a specified system operation and programmed to end output of processed data by a specific system operation or never to end until manually forced to discontinue. To start event tracking use Event Invoking and select one of the available system operations that will cause event data output to begin. (Do not select “Pseudo” to begin event tracking. This operation is a non-occurring event intended for use with “End Event” when the event output should not end by a system operation.)





Extension selected to start event output.



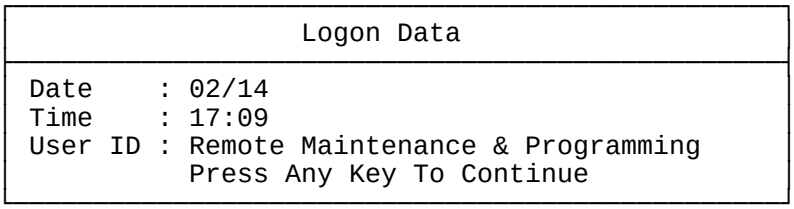


Feature Key selected to start event output. Then a specific key is selected to start the event output through the “SMDR” serial port.

Important: data must be collected in a dedicated collection PC using a special Event Tracking software or a terminal emulation software that writes to a text file for later deciphering at customer service.

Logon Data

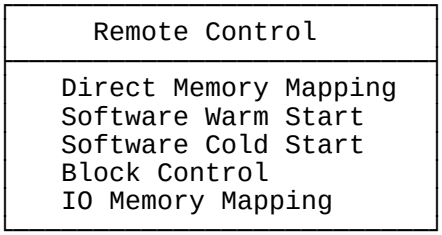
Logon Data is used to view the date and time that the PC-DBA session began.

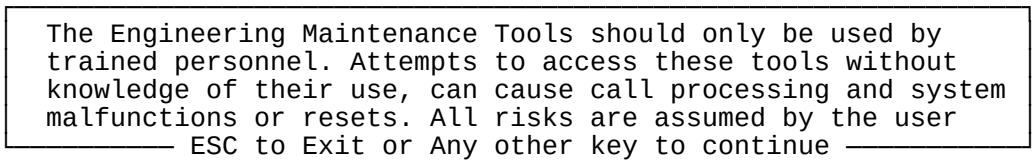


Remote Control

Remote Control allows the PC-DBA user to invoked system critical operations. This operation allows the user to:

- Restart the system.
- Restart the system and re-load default data (Master Clear).
- View and alter system memory contents (for the purposes of diagnostics).
- Block system resources for the purposes of maintenance operations.




The Engineering Maintenance Tools should only be used by
trained personnel. Attempts to access these tools without
knowledge of their use, can cause call processing and system
malfunctions or resets. All risks are assumed by the user
ESC to Exit or Any other key to continue

```
──────────────────────────────── DX80 PC-DBA ────────────────────────────────
[Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                            Time: 21:03:37
Engineering Maintenance Tool - Direct Memory Mapping

 SEG:OFF   00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F   ASCII  Value
─────────  ─────────────────────────────────────────────────  ──────────────

                                          Input the memory address and offset to view, then press
                                          Enter.

Enter Address :

Note : Memory Address:(in hexadecimal format - xxxx:xxxx)
──────────────────────────────── R16UM0.F21 ─────────────────────────────────
```

```
──────────────────────────────── DX80 PC-DBA ────────────────────────────────
[Cnt]                    KSU Revision : K16UM0.F19          Date: 01/02/14
                                                            Time: 21:04:11
Engineering Maintenance Tool - Direct Memory Mapping

 SEG:OFF   00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F   ASCII  Value
─────────  ─────────────────────────────────────────────────  ──────────────
AF34:0100     A0 B0 00 B4 00 D1 E0 D1 E0 8B F0 2E C4 1E 68   ..............h
AF34:0110  01 26 FF 70 04 FF 76 FC 9A 4D 13 F7 AB B0 00 50  .&.p..v..M.....P
AF34:0120  50 B3 01 53 A0 B2 00 B4 00 8B F0 2E C4 1E 6C 01  P..S..........l.
AF34:0130  26 FF 30 FF 76 FC EB 40 82 7E 08 00 74 3F B0 00  &.0.v..@.~..t?..
AF34:0140  50 50 B3 01 53 A0 B0 00 B4 00 D1 E0 D1 E0 8B F0  PP..S...........
AF34:0150  2E C4 1E 68 01 26 FF 70 04 FF 76 FC 9A 4D 13 F7  ...h.&.p..v..M..
AF34:0160  AB B0 00 50 50 B3 01 53 8A 4E 08 B5 00 8B F1 2E  ...PP..S.N......
AF34:0170  C4 1E 70 01 26 FF 30 50 9A 4D 13 F7 AB 8A 46 08  ..p.&.0P.M....F.

                                          The memory block requested is shown. This data can be output to a
                                          printer or collected in a text file (by third-party software) and sent to
Enter Address :                           customer service for analysis. Press Enter to view successive memory
                                          blocks.

Note : Memory Address:(in hexadecimal format - xxxx:xxxx)
──────────────────────────────── R16UM0.F21 ─────────────────────────────────
```

Software Warm Start

Use Software Warm Start to cause the system to restart operations. This operation requires confirmation since all calls in progress will be disconnected.

```
┌──────────────────────────────────┐
│      Software Warm Start         │
├──────────────────────────────────┤
│ Progressive operations in KSU    │
│ shall be forcedly abandon !      │
│ Please press (Y/y) to confirm    │
└──────────────────────────────────┘
```

Software Cold Start

Use Software **COLD** Start to cause the system to restart operations and reload default customer database data. **This operation requires confirmation since all calls in progress will be disconnected and the current database will be erased!**

```
┌──────────────────────────────────┐
│      Software Cold Start         │
├──────────────────────────────────┤
│ Progressive operations in KSU    │
│ shall be forcedly abandoned !    │
│ Programming status in KSU        │
│ shall be returned to default     │
│ settings!                        │
│ Please press (Y/y) to confirm    │
└──────────────────────────────────┘
```

Block Control

Block Control is used to restrict access to certain system resources for the purposes of trouble-shooting. E.g. a CO Line might be blocked from use in order to test the circuit while avoiding user access to the CO Line circuit. To use Block Control, the Cabinet number, Board/Module number and Port number must be known.

```
┌──────────────────┐
│  Block Control   │
├──────────────────┤
│      Board       │
│      Port        │
└──────────────────┘
```

Block Control can be used to block access to a Board or a port. The specific board/module and/or port number must be known.

```
┌──────────────────────┐
│ Slot Pos. :  (1-10)  │
└──────────────────────┘
```

```
┌──────────────────────┐
│ Port No. :   (1-8)   │
└──────────────────────┘
```

```
┌──────────────────┐
│  Block Control   │
├──────────────────┤
│      Unblock     │
│      Block       │
└──────────────────┘
```

When a port or board/module is blocked it must be Unblocked to regain access to the resource.

I/O Memory Mapping

Use I/O Memory Mapping when instructed to do so by a customer service representative. This operation is used to view system Input/Output port values.

```
The Engineering Maintenance Tools should only be used by
trained personnel. Attempts to access these tools without
knowledge of their use, can cause call processing and system
malfunctions or resets. All risks are assumed by the user
          ESC to Exit or Any other key to continue
```

```
                              DX80 PC-DBA
[Cnt]                  KSU Revision : K16UM0.F19          Date: 01/02/14
                                                          Time: 21:09:38
Engineering Maintenance Tool - I/O Memory Mapping

 I/O addr    Value
 ________   ________









Enter Address :

Note : Memory Address:(in hexadecimal format - xxxx)
                              R16UM0.F21
```

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